# State of New Jersey

DEPARTMENT OF THE TREASURY
DIVISION OF PURCHASE AND PROPERTY
Purchase Bureau
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## Date July 8, 2005

Ref: 06-X-38019 Management Consulting: Market Assessment Services, BPU, Energy Efficiency Programs
Bid Opening Date: 07/28/2005

## Addendum # 1

**Question #1.** **Re. 4.4.4 Section 4 -Price Proposal, Is there an approximate budget range or target budget for this evaluation project? We understand that the Division might not want to release a specific budget amount but is it possible that a guideline might be available?**

Answer:
No specific budget has been established for this project. Also, see response to question 24.

**Question #2** **Page 24 Section 3.14.2: The description of the market share monitoring task includes the design and development of methods for collecting and analyzing data on the market share of energy efficient measures. Because of the time period in which all of the work under this contract must be completed is 4 to 6 months, we assume that this task does not include implementation of these methods. That is, we assume that the work effort will not include implementation of the market share monitoring, since such an effort would require longer-term data collection and analysis. However, the description of market share monitoring for the Residential New Construction Program does state "and implement a system for monitoring and reporting."**

1. **Please clarify whether this task does, in fact, include implementation of market share monitoring for any/all programs.**
2. **If yes to the above, does *implementation* refer to monitoring market share (estimating market share periodically over a period of time) or development of a point estimate of market share?**

Answer:
1. This task does not include implementation of ongoing market share monitoring. It is intended to require the development of a "plan" for ongoing market monitoring including all of the elements identified in the RFP. Any ongoing market share monitoring would be performed pursuant to a separate solicitation. Also, see response to question 13.

2. Section 3.14.2 has been modified to delete the words "and implement"

**Question #3** **Would the winning bidder or any subcontractor of the winning bidder of this project be eligible to bid on any program implementation RFP's for energy efficiency and or renewable energy?**

Answer:
No.

**Question #4** **This project appears the anticipate surveys of end use customers including past program participants. If so, would the BPU be providing data to draw samples from or would the winning bidder need to draw samples from secondary sources or the utilities?**

Answer:
The winning bidder would need to draw samples from secondary sources or the utilities. Also, see response to question 8.

**Question #5** **How would the results of this program be used in upcoming RFPs for implementation?**

Answer:
The results of this project will not be directly utilized in the RFPs for program managers. However, the results of this project could be used to modify existing programs or to develop new programs.

**Question #6** **With regard to the N.J.A.C. 17-13.4 reference related to subcontractors in section 4.4.3.8-does the sub-contractor(s) have to be incorporated in New Jersey ?**

Answer:
No. However, Bidders that intend to subcontract must attach copies of NJ Commerce & Economic Growth Commission registration for each subcontractor listed, per the note on form PB-SA-3 page 56 of the RFP.

**Question #7** **Is it possible that the Division will release a list of interested bidders for teaming purposes?**

Answer:
No. The State has no way of knowing who will bid on the RFP due on July 28, 2005.

**Question #8** **3.14.2 Market Share Monitoring. Is the Division open to considering on-site data collection at customer facilities and if so would utility billing data be available for developing the sample frame and customer contact information?**

Answer:
OCE will consider on-site data collection at customer facilities. The OCE will work with the selected contractor to obtain utility customer billing data and other information needed to perform the evaluation.

It should be noted however, that the utilities have expressed a reluctance to provide confidential customer information to the selected contractor without the customer's authorization to forward such information. While, the OCE will work with both parties to develop a process for obtaining the necessary information from the utilities, the selected contractor should also be prepared to use secondary sources of information if the information is not provided by the utilities.

**Question #9** **Re. 1.2.1 Section 1- Description of the OCE and NJCEP, The last paragraph of this subsection mentions studies completed by other firms, will you consider these firms to bid on this RFP? Does this create a conflict of interest? These firms would have an unfair advantage in responding to this RFP.**

Answer:

Firms that have provided evaluations services in the past, including the studies referenced in this RFP, are permitted to bid on this RFP.

**Question #10** **Re. 4.4.4 Section 4- Price Proposal, Because of the uncertainty and scope of work being so broad, is it possible to submit an hourly rate for each discipline of anticipated staff as a unit price with a not to exceed price.**

Answer:

No. The bidder will submit price proposal as required in Attachment 5.

**Question #11** **In section 1.2.1, on page 9, the RFP mentions CEC's initial recommendations dated July 21, 2003, can we obtain a copy of this document?**

Answer: See attached The New Jersey Clean Energy Program: Recommendations for Administration and Fund Management

**Question #12** **Section 3.10 mentions renewable energy, but renewables are not included in the list of programs to be evaluated. Our assumption is that Section 3.10 refers to general evaluation issues, and that renewable energy is not to be addressed in this evaluation. Is that correct?**

Answer:

The evaluation is not intended to address renewable energy issues or programs. However, to the extent there is overlap between energy efficiency and renewable energy programs, for example, should the residential new construction program consider incentives for solar hot water or photovoltaics, these issues should be addressed.

**Question #13** **This RFP states that, "It is the intent of this RFP that all work be completed within four (4) to six (6) months of contract award." (Section 1.1) . Certain questions can be thoughtfully addressed on the basis of secondary research within that time frame. However, based on our experience with project initiation, reviews, and logistics, the probability of effectively designing and conducting the several market assessments, monitoring, baseline studies, and other work requested, as well as the comprehensive analyses appropriate to this work within six months from contract award is not high.**

**Is the BPU willing to work with the selected contractor to develop priorities among the evaluation issues raised, and to entertain the development of a schedule that identifies those products (reports, data bases) that can be completed within six months and to set forth a supplementary schedule for completing the additional products in a systematic manner in the ensuing weeks?**

Answer:

Yes. Also, see response to question 17.

**Question #14** **Will the evaluator have access to customer data from utilities?**

Answer:
See response to question 8.

**Question #15** **What data are currently being collected by implementation contractors?**

Answer:
OCE is aware that at a minimum, implementation contractors are collecting all of the information included on program applications and information required for quarterly reports and other regulatory requirements. The quarterly reports include expenses, number of participants and energy savings. OCE is unaware of what other information is collected by implementation contractors.

**Question #16** **Do subcontractors, in addition to the prime contractor, need to provide a copy of their business registration certificates?**

Answer:
Yes. Also, see response to question 6.
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**Question #17** **Page 8 Section 1.1: Please confirm that all work under the awarded contract must be completed within 4 to 6 months of the contract execution. Is there a specific date by which all work must be completed regardless of the contract execution date? Is the schedule driven by regulatory process and deadlines?**

Answer:
4 to 6 months represented OCE's best estimate of the time needed to perform the study. OCE will entertain proposals with longer timeframes. The schedule is in part driven by the desire to have certain market information in time to inform the development of 2006 programs and budgets. Also, see response to question 13.

**Question #18** **Page 21 Section 3.8: How do the deliverables for this project differ from those just recently completed by KEMA and Navigant?**

Answer:
KEMA and Navigant performed a study that determined the technical, economic and market potential for energy efficiency and renewable energy technologies. The deliverables for this project are intended to provide more specific market intelligence that will be utilized to modify and improve the current line-up of energy efficiency programs.

**Question #19** **Page 21 Section 3.9: Last paragraph, it states that the market assessments will apply to those programs listed plus those from recent KEMA and Navigant studies. Can you list those that you wish to be included so that there is no misunderstanding. We wish to accurately respond to your request.**

Answer:
Section 3.9 references measures, services, technologies and practices identified in the KEMA and Navigant studies but does not reference programs from those studies. The programs OCE wishes to be included are those listed in Section 3.9.

**Question #20** **Page 23 Section 3.13. What is the stratification required for the results in the Market Assessment Report (statewide level, utility service area level, etc.)?**

Answer:
Statewide, taking into consideration any potential regional differences.

**Question #21** **Page 24 Section 3.14.2: What is the stratification required for the results in the Market Share Monitoring Report (statewide level, utility service area level, etc.)?**

Answer:
See response to question 20.

**Question #22** **Page 25 Section 3.15: What is the stratification required for the results in the Baseline Study Report (statewide level, utility service area level, etc.)?**

Answer:
See response to question 20.

**Question #23** **Page 25 Section 3.16: What is the stratification required for the results in the Performance Indicator Report (statewide level, utility service area level, etc.)?**

Answer:
Performance indicators should be developed for each program on a statewide basis.

**Question #24** **Page 34 Section 4.4.4: Under BPU Docket No. EX04040276, Agenda Date 12/22/04, there is a table showing a 2005 administrative budget of $10.4M of which $2.5M is listed for Evaluation and Related Research. It states that the "evaluation and related research portion of the administration budget includes the procurement of and payment to third party evaluation contractors".**

1. **Is this work funded from this $2.5M?**
2. **Is the budget for this work $2.5M?**
3. **What other studies are planned that will be funded from the same 2005 budget?**
4. **Will this work be funded with dollars from future years' budgets?**

Answer:
1. Yes.

2. No. No specific budget has been established for this project.

3. The attached 2004- 2005 Evaluation and Research Plan sets out planned 2005 evaluation activities.

4. Some of the planned 2005 evaluation activities may commence in or carry over into 2006 and would be funded through the 2006 budget.

**Question #25** **Page 76 Section 3.14: "Delivery Guarantees" states, "In the event delivery of goods or services is not made within the number of days stipulated or under the schedule defined in the Request for Proposal, the using agency may be authorized to obtain the material or service from any available source, the difference in price, if any, to be paid by the contractor failing to meet his commitments." Since the RFP does not stipulate a specific schedule or number of days for completing tasks, does this condition still hold?**

Answer:
No. Also, see response to questions 13, 17.

**Question #26** **Page 106, Appendix 3 provides a list of performance indicators. Is there a single document that contains the last measured value for these and when they were last measured? If not, please provide a reference where each can be found.**

Answer:
The attached 2003 Program Evaluation identifies the 2003 goals and compares actual results to the goals. Many of the performance indicators listed on page 106 of the RFP require market assessments to determine whether or not they were achieved. Since market assessments have not been performed over the past several years, they have not been measured.

**Question #26** **Is there preference for a NJ-based firm?**

Answer:
No, there is no preference.

**Question #27** **Which products are covered by the ENERGY STAR Products Program?**

Answer:
Windows, lighting and appliances. See program description for additional details regarding products promoted in 2004.

# 2003 Program Evaluation

## New Jersey Clean Energy Program
## Energy Efficiency and Renewable Energy Programs

**Prepared by:**

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**Center for Energy, Economic and Environmental Policy**

**July 30, 2004**

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## Executive Summary

The New Jersey Clean Energy Program provides financial and other incentives to the State's residential customers, businesses and schools that install high efficiency or renewable energy technologies. The programs help customers lower energy costs and generate electricity using clean, renewable sources of energy. The programs are authorized and overseen by the New Jersey Board of Public Utilities (BPU).

This report provides a program by program assessment of 2003 results including a comparison of actual results to proposed program goals. The assessment included interviews with the Office of Clean Energy and with program managers. The assessment is performed in the context of the ongoing changes to the administrative structure of the programs experienced in 2003.

2003 was a year of significant achievements that reduced energy usage in New Jersey and increased the amount of electricity generated using clean sources of fuel. It was also a year of significant changes to administrative structure of the programs.

In 2003, the New Jersey Clean Energy Program continued to build on the successes achieved in the first two years of the program. Two programs have received national recognition with the Residential HVAC program being recognized by the American Council for an Energy Efficient Economy (ACEEE) as one of the best energy efficiency programs in the nation and the ENERGY STAR® Homes Program being recognized by the US Environmental Protection Agency as the "2002 Partner of the Year".

The table below summarizes New Jersey Clean Energy Program results for the year 2003 including program expenditures and the energy savings produced by measures installed in and committed to in 2003.

**Summary of 2003 Program Results**

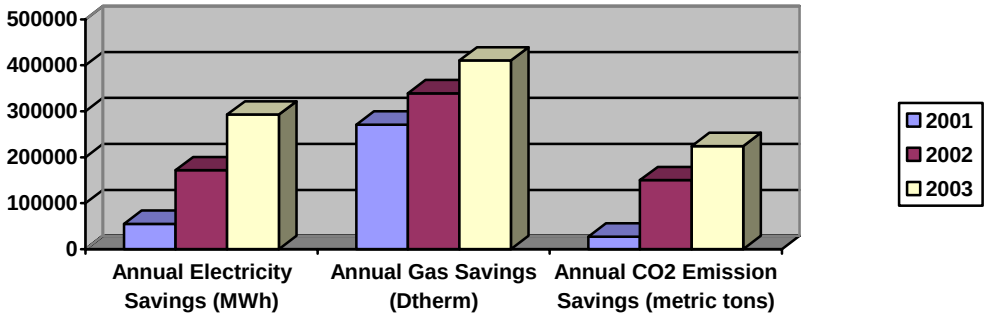
| | Actual | Committed | Total |
|---|---|---|---|
| **Total Expenditures** | **$97,785,000** | **$79,453,000** | **$177,238,000** |
| **Energy Savings:** | | | |
| **Annual Savings from Measures Installed in 2003** | | | |
| **kWh** | **292,815,000** | **246,299,000** | **539,114,000** |
| **Therms** | **4,105,170** | **6,360,440** | **10,465,620** |
| **Lifetime Savings from Measures Installed in 2003** | | | |
| **kWh** | **3,849,145,000** | **4,147,746,000** | **7,996,891,000** |
| **Therms** | **77,397,090** | **125,638,900** | **203,035,990** |
| **Demand Savings (KW)** | **263,839** | **87,274** | **351,112** |

Program expenditures dropped slightly from $99.9 million in 2002 to $97.7 million in 2003. This was in part due to the ongoing changes to the programs and the suspension of marketing activities discussed in more detail below. While overall expenditures were down, several programs including the Residential New Construction Program and the Customer On-Site Renewable Energy (CORE) Program continued to grow in terms of the number of program participants.

Energy savings and associated emission reductions produced by the programs in 2003 increased by more than 25% over the levels achieved in 2002. The growth in savings is attributable primarily to growth in three programs: the Energy Star Products Program saved over 61,000 MWh through the lighting initiative that was implemented in 2003 for the first time, growth in the CORE Program which delivered 40,000 MWh of renewable generation more in 2003 than in 2002, and the C&I Program which delivered over 50,000 MWh more in savings in 2003 than in 2002, primarily due to the installation of larger projects that delivered more savings.

The delivered energy savings exceeded the overall goal of the New Jersey Clean Energy Program which was to grow energy savings by 20% per year above the levels achieved in 2002. A comparison of the annual energy and emission savings demonstrates the significant gains the program has achieved in influencing businesses and homeowners throughout the State to invest in energy efficiency and renewable energy.

**Savings Continue to Grow**




Several changes to the administrative structure of the New Jersey Clean Energy Program were implemented in 2003. The BPU created the New Jersey Clean Energy Council to provide it with advice and recommendations regarding the administrative structure of the programs, programs to be implemented and program budgets and the BPU transferred responsibility for administration of the programs from the State's electric and gas utilities to the BPU's Office of Clean Energy.

Program marketing and evaluation activities that were initially planned for 2003 were suspended while the BPU considered changes to the administrative structure of the programs. During much of the year uncertainty existed regarding program budgets, what marketing and evaluation activities would be permitted and who would be administering the programs. This report assesses 2003 program results in the context of these ongoing changes that took place in 2003.

This report provides a program by program assessment of 2003 results that includes program specific recommendations. However, there are a number of general issues applicable to all of the programs that are discussed below.

*Marketing*

In early 2003, as the BPU began its review of the administrative structure of the New Jersey Clean Energy Program, the Office of Clean Energy directed the utilities to significantly cut back on most marketing and sales activities. Specific targeting marketing efforts were eliminated and contracts with sales agents utilized by the utilities were cut back or eliminated. The intent was that utility specific marketing activities would be replaced by a more generic statewide Education and Outreach program sponsored by the BPU.

Some programs, such as the Residential HVAC Program, use targeted marketing to drive results. Therefore, it is not surprising that without marketing in 2003 participation levels dropped by 10% compared to 2002 levels. The utilities believed that a 5% increase above 2002 levels was achievable if additional marketing was permitted.

Other programs, such as the C&I Program, are less dependent on targeted marketing relying instead more on direct sales activities to drive results. That is, C&I customers require more of a direct sales approach whereby New Jersey Clean Energy Program sales representatives meet with C&I customers to explain in person the benefits of the program. The C&I Program had several proposed goals for 2003 that were not met such as achieve 12 lighting remodeling projects and 42 comprehensive projects. The utilities believe that a major factor that contributed to these goals not being met was the cut back in the sales force.

For some programs the reduction in sales and marketing activities had little or no impact. For example, the Residential New Construction Program continued to grow rapidly. Given that many of the large production builders have agreed to build all of their new homes to Energy Star standards, there would have been little need to market this program in 2003. Given the success of the program, utilities would most likely have eliminated most marketing activities for this program on their own.

The New Jersey Clean Energy Program requires both generic marketing that generates general awareness of the benefits of energy efficiency and renewable energy and specific sales and marketing activities that generate “sales” of energy efficiency and renewable energy products. While CEEEP understands that as of the time of the writing of this report, the Office of Clean Energy is getting close to kicking off its generic Education and Outreach Program, we are concerned that an extended period with minimal marketing will have negative impacts on some of the programs. This is especially true since it now appears that the new program managers will not be up and running until 2005 meaning the programs will have gone almost two years without appropriate marketing.

CEEEP recommends that the Office of Clean Energy convene meetings with the utilities to discuss specific program marketing and sales needs and the potential for initiating additional marketing activities in 2004 rather than waiting for the new program managers to be up and running.

*Program Approval Process*

In 2003, the Clean Energy Council held numerous committee and subcommittee meetings to discuss potential changes to the existing programs and budgets and to consider new programs. The Council recommended several new programs and modifications to existing programs that were ultimately approved by the BPU.

While the CEC and its committee members are to be commended for the substantial time and expertise dedicated to the process, CEEEP recommends that a more formal and rigorous structure be established for consideration of new programs in the future. The process should include more specific market intelligence gathered through research and evaluations authorized by the Office of Clean Energy and should take into consideration and balance a number of sometimes competing objectives such as maximizing energy savings and equity issues that argue for insuring programs exist for all classes of customers. The process should set out the methodology that will be utilized to review any new program proposals and identify the entities responsible for performing the different elements of the review.

CEEEP also believes that a program's costs and benefits should be considered as part of the program review. A cost benefit analysis does need not be significant in scope or cost. CEEEP has a proposed task order pending before the Office of Clean Energy to develop a methodology for performing cost benefit analyses that will include standardized inputs. New program proposals should include an estimate of program costs and energy savings that can be run through the proposed methodology.

New program proposals should be considered first by the Clean Energy Council committees utilizing a methodology for reviewing program proposals recommended by the Clean Energy Council and approved by the Office of Clean Energy. The committees will make recommendations to the full Council and the Council will submit recommendations for review by the Office of Clean Energy and approval of the BPU.

The following presents an overview of the key elements of a methodology for reviewing program proposals followed by our recommendation for a process to be utilized in 2004.

*Key Elements of Proposed Program Review Process*

CEEEP believes the elements listed below would comprise and enable a robust program review process. A brief discussion of the current status of each element is also provided. Some of these proposed key elements were included as part of last year's program review process and some need to be developed.

*Clear and measurable goals and objectives for the New Jersey Clean Energy Program:* The Clean Energy Council should recommend overall goals and objectives for the New Jersey Clean Energy Program for review by the Office of Clean Energy approval of the BPU. These goals and objectives would be used by the Clean Energy Council and others in the development of recommendations regarding programs and budgets. The Clean Energy Council recommended goals and objectives in 2003 and the BPU adopted certain objectives in 2004.

*Regular and ongoing technology assessments:* The Office of Clean Energy should regularly select technologies to be assessed in market assessments with support from CEEEP and/or selected evaluation contractors. The Clean Energy Council and CEEEP will provide recommendations regarding the timing and scope of proposed market assessments to the Office of Clean Energy for approval. This process was utilized to select the technologies included in the current market assessments being performed to inform the CRA proceeding.

*Regular and ongoing baseline studies:* Baseline studies should be performed and updated regularly by third party evaluation contractors as managed by CEEEP. Initial recommendations on baseline studies that need to be performed will be identified in the evaluation plan being developed by CEEEP. Thereafter, the Clean Energy Council and CEEEP will provide recommendations regarding the timing and scope of proposed baseline studies to the Office of Clean Energy for approval.

*Identification of market barriers:* Market barriers will be identified through research and evaluations and supported by input from program managers, the Clean Energy Council or entities proposing new programs. The analysis of market potential currently underway will identify high level barriers to the installation of specific technologies. Additional, more detailed, market assessments are required to identify more specific market barriers that need to be considered in the design of programs. The more detailed studies will be authorized by the Office of Clean Energy.

Program strategies need to be developed by program managers that are designed to overcome market barriers identified through evaluations. New program proposals should include a proposed evaluation plan that measures how well the strategies are working towards achieving program goals and that identifies any information that needs to be tracked to perform the evaluations.

*Determination of market intervention strategies and assessment of likelihood of success:* Market intervention strategies will be developed by program managers to overcome market barriers identified through evaluations. Assessments of the likelihood of a programs success will be performed by evaluation contractors.

*Objective criteria to rank opportunities:* The ranking of opportunities will be performed as part of the ongoing market assessments. The results of the rankings performed as part of the market assessments should be considered by the Clean Energy Council in its review of specific program proposals.

*Assessment of cost effectiveness:* CEEEP currently has pending before the Office of Clean Energy a proposed task order to develop a methodology and the standardized inputs needed to perform a cost benefit analysis that would supplement the cost effective analysis performed as part of the market potential studies. Program proposals should include an estimate of program costs and energy savings that can be run through the proposed methodology.

*Development of program specific goals:* All programs should include at a minimum specific goals for participation levels and energy savings and performance indicators to measure success. Initial goals should be developed by program managers or entities proposing new programs and updated annually based on evaluation results and approved by the Office of Clean Energy.

*Energy saving protocols:* Protocols for measuring energy savings exist for the programs currently managed by the utilities. Protocols need to be developed for other programs. Protocols should be developed by or under the direction of CEEEP and approved by the Office of Clean Energy after review and concurrence by the Clean Energy Council. Protocols need to be updated from time to time based on evaluation results.

As stated above, work has commenced on developing several of the key elements that we recommend be included in the program review process. For example, an analysis of market potential is underway as part of the market assessments being conducted. That study will aid in identifying technologies that should be promoted and a proposal to develop a methodology to perform a cost benefit analysis is being considered.

CEEEP also believes that it is important to assess the impact of any new program on existing programs. For example, in 2003 the BPU approved a pay for performance program aimed at the C&I market already served by an existing program. Questions currently under consideration include whether the new program will compete with or compliment the existing program, i.e. will the new program target markets or technologies underserved by the existing program or will customers have a choice as to which program provides them with a greater incentive; if the later, will this create confusion in the marketplace or will competition between programs provide additional benefits. Ideally these types of questions should be resolved in the future prior to establishing budgets for new programs.

Another example concerns the financing programs managed by the BPU and the New Jersey Economic Development Authority (EDA). Several new financing programs were approved in 2003 that will potentially impact existing programs. The financing programs are for technologies that are already eligible for rebates. Topics now under consideration include how will the availability of financing impact the number of rebates granted under the C&I and CORE program? Should the programs be marketed separately or jointly? If jointly, what are the mechanisms for doing so? Like the example above, CEEEP believes these issues are best resolved prior to setting program budgets and designs.

*Proposed 2004 Program Review Process*

CEEEP believes the Office of Clean Energy, in consultation with the Clean Energy Council, should institutionalize a formal process for reviewing new program proposals that incorporates the key elements identified above. However, given the time constraints associated with the ongoing CRA proceeding, CEEEP recommends the following process be utilized for the remainder of 2004:

*Approve New Jersey Clean Energy Program Goals:* The Clean Energy Council recommended goals, objectives and strategies for energy efficiency and renewable energy programs in 2003. While the Board has approved certain objectives in a recent order, the Board, to date, has not acted on the more specific goals and objectives recommended by the Council. The Board should consider the goals recommended by the Council and adopt goals and objectives that will be used to guide the development of proposals for funding levels, programs and budgets. CEEEP believes that goals and objectives should be established before considering specific recommendations regarding programs and budgets.

*Establish Funding Levels:* CEEEP believes that the overall New Jersey Clean Energy Program funding levels for the years 2005 through 2008 should be established before considering recommendations regarding programs and budgets. The funding levels should be based on consideration of the market potential studies discussed above, comments from interested parties and consideration of other factors such as impact on rates. Programs and budgets should be designed based on the level of available funding.

*Determine Available Funds:* Available funds for 2005 will be a function of the 2005 funding level and unspent funds from previous years. The Office of Clean Energy should ask all program managers to submit actual costs through the end of August and estimates of costs through the remainder of the year. This information, along with unspent funds residing with the fiscal agent and certain program managers such as EDA, is needed to estimate the level of funding available for 2005.

*Perform Cost Benefit Analysis:* A cost benefit analysis should be performed for all existing programs and all proposed programs. The cost benefit analysis will assist in ranking programs when developing program line ups and budgets. A cost benefit analysis was performed for some of the programs as part of the ongoing market potential studies. As stated above, the cost benefit analysis does not need to be significant in scope or cost.

*Establish Program Budgets:* Once goals and objectives have been established, available funding determined and a cost benefit analysis performed, the Office of Clean Energy and the Clean Energy Council will have the tools needed to develop recommendations regarding programs and budgets. The Office of Clean Energy should develop planning budgets for consideration by the Clean Energy Council.

Program budgets should be developed for 2005 using a bottom up approach as opposed to the top down approach initially utilized last year. That is, program managers or others proposing a new program should develop itemized budgets that set out what it would cost to properly implement the program. Consideration should be given to estimated participation rates and rebate levels, what level of marketing is needed, training costs, etc. For certain programs, such as CORE and Residential New Construction, 2005 budgets will be in large part a function of commitments made to projects in 2003 and 2004 that will be installed in 2005. The Office of Clean Energy should direct the Program Managers for the programs with commitments that will come due in 2005 (RNC, C&I,

CORE, BPU Grid, REAP and REED) to provide estimates of outstanding commitments and the amounts that will be paid out in 2005 to meet those commitments.

Once program budgets are developed using the bottoms up approach, programs should be ranked as to how well they meet the goals and objectives adopted by the BPU. The budgeting process becomes iterative at this point, utilizing best judgment as to whether certain programs should be eliminated if insufficient funds are available or certain program budgets should be increased or reduced based on an understanding of the impacts of an increased or reduced budget. This process continues until a line up of programs with budgets that fit within the available funding is established.

*Program Components:* Prior to implementing any program, market barriers should be identified, strategies for overcoming such barriers should be identified, goals and performance metrics should be established, protocols for measuring energy savings should be developed and an evaluation plan should be developed for assessing how well the program is doing towards achieving such goals. Impacts of new programs on existing programs should be considered.

CEEEP believes that the process set out above should be utilized for this year while a more formalized approach for use in future years is established and additional information is made available through evaluation activities that will be set out in the forthcoming evaluation plan.

*Evaluation*

The technologies eligible for rebates today are for the most part the same as those that were eligible in 2001. The normal program and planning process identifies technologies to be promoted through the use of rebates, sets out an evaluation plan for establishing baselines and monitoring changes in market share due to programs, and periodically adjusts rebate levels based on the market intelligence received through the evaluation.

Program managers typically rely on market intelligence gained through evaluations to determine technologies that should be added to or deleted from a program or on market penetration levels and prices to determine if rebates should be modified. This is particularly true for the C&I program where market conditions change rapidly. Without the information gained through the planned evaluations that were terminated, program managers have not had the information required to make an informed decision regarding potential changes to the programs.

An evaluation should be initiated in 2004 that identifies changes in the marketplace since the current rebates were implemented in 2001. The evaluation should identify new technologies that should be eligible for rebates, technologies for which rebates are no longer needed and technologies for which existing rebate levels should be lowered or raised based on changes in the marketplace since the rebates were initiated. CEEEP notes that these types of evaluation activities will be included in the proposed evaluation plan but wishes to stress the current need for this type of information and to make changes to rebate levels as appropriate.

**Summary of Key Recommendations**

1. The Office of Clean Energy should convene meetings with the utilities to discuss specific program marketing and sales needs and the potential for initiating additional marketing activities in 2004 rather than waiting for the new program managers to be up and running.

2. A more formal and rigorous structure should be established for consideration of new programs in the future. The process should set out the methodology that will be utilized to review any new program proposals and identify the entities responsible for performing the different elements of the review.

3. An evaluation should be performed that identifies changes in the marketplace since the current rebates were implemented in 2001. The evaluation should identify new technologies that should be eligible for rebates, technologies for which rebates are no longer needed and technologies for which existing rebate levels should be lowered or raised based on changes in the marketplace since the rebates were initiated. CEEEP notes that these types of evaluation activities will be included in the proposed evaluation plan being developed but wishes to stress the need for this type of information and to make changes to rebate levels as appropriate.

4. Residential New Construction program activity should be carefully monitored to assess impact on future year budgets. Over 20,000 homes were committed to the program in 2002 and 2003 that may be built in the next two years. Program managers should carefully monitor the status of committed projects and future sign ins to insure the program does not have adverse impacts on future budgets.

5. Consideration should be given to establishing a multi-year schedule of reduced incentive levels for the Residential New Construction Program, in part to reduce the impact on future budgets and in part in recognition of the success of the program.

6. Consideration should be given to expanding Energy Star lighting promotions given the success if this effort in 2003.

7. The BPU should explore the reasons for the low participation rates of Abbott schools and take corrective actions on an expedited basis.

8. CORE program activities should be carefully monitored to assess impacts on future budgets given the high number of recent projects approved. CEEEP notes that this issue was discussed at a recent meeting of the Clean Energy Council Renewable Energy Committee.

Additional recommendations for each program are included at the end of the write up regarding the program.

# Energy Efficiency Programs

## Residential Gas & Electric HVAC Program

### "Warm Advantage" & "Cool Advantage"

**Program Description**

The following summarizes the program description approved by the Office of Clean Energy in the Memorandum of Understanding with the utilities:

The Residential Gas & Electric HVAC Program (R-HVAC) promotes energy efficient HVAC equipment and is designed to transform the market to one in which quality installations of high efficiency equipment are commonplace. For the R-HVAC program the market is considered transformed when rebates can be reduced or eliminated without a drop off in market penetration for a specific HVAC appliance or product.

The R-HVAC program promotes both the sale of high efficiency equipment and improvements in sizing and installation practices that affect operating efficiency. Rebates under the R-HVAC program are available to promote the installation of qualified HVAC equipment (ENERGY STAR® rated gas furnaces, boilers and efficient gas water heaters; energy-efficient central air conditioners and heat pumps) in existing residential homes (retrofit) and newly constructed homes located in Smart Growth Areas.

The R-HVAC Program offers sales and technical training for HVAC technicians and contractors. The long-term goal is to transform the market to one in which properly designed and installed energy-efficient HVAC equipment becomes the market standard.

The utilities identified several market barriers that must be overcome in order to achieve this goal including: (1) split incentives (between builders and homebuyers and between owners and renters); (2) consumers' lack of information on the benefits (both energy and non-energy) of efficient equipment and quality installations; (3) lack of training for HVAC contractors on key installation issues and approaches to "selling" efficiency; (4) consumers' inability to differentiate between good work and poor work or between quality contractors/technicians and those less skilled and (5) higher costs than standard efficiency equipment related, in part, to lower sales volumes for energy-efficient equipment.

The R-HVAC Program employs several key strategies to address these barriers:

- Financial incentives for the sale and purchase of ENERGY STAR-rated gas heating equipment and energy-efficient water heaters, declining over time as the installations of energy-efficient equipment become commonplace;
- Financial incentives for the sale or purchase and installation of high efficiency electric HVAC cooling equipment for which documentation of proper sizing and installation is provided, declining over time as the installations of energy-efficient equipment become commonplace;
- Communication with and education of HVAC distributors and contractors;

- ENERGY STAR sales training for contractors (i.e. how to sell efficiency);
- Technical training to HVAC contractors on how to install energy-efficient natural gas equipment and key elements of quality electrical HVAC installations; and
- Support of efforts to promote HVAC technician certification.

**Program Delivery**

In 2003, the R-HVAC program was delivered by the State's seven natural gas and electric utilities. Rebates for electric equipment are processed by the electric utility serving the customer and rebates for gas equipment by the gas utility.

**Program Goals and Minimum Requirements for Program Administration**

Goals and minimum requirements for program administration were not adopted for the R-HVAC Program for the 2003 program year. However, the November 1, 2002 filing of the Collaborative (the Collaborative included the seven electric and natural gas utilities and NRDC) included proposed 2003 goals and minimum requirements for program administration. Some of the proposed goals for the R-HVAC Program, such as number of rebates paid, are relevant, in the context of ongoing changes to the program, to the assessment of the 2003 program results. Some goals, such as increasing consumer awareness, are not relevant since the evaluation work needed to assess achievement of these goals was suspended.

The proposed 2003 goals for this program were developed with a proposed budget of approximately $19 million and under the assumption that the utilities would have the ability to utilize various marketing tools to assist in achieving the goals. However, in early 2003, the budget for the program was reduced to $7 million and all marketing activities were suspended. The budget was subsequently increased to $13.97 million which is approximately $5 million below the budget developed to support the goals.

The proposed program goals were developed by the utilities assuming that rebate levels would be reduced in 2003 from 2002 levels. The utilities believed that the program had achieved sufficient momentum such that they could lower rebate levels in 2003 and still increase the number of rebates over 2002 levels. However, the changes to rebate levels were not implemented until 2004 so the higher rebate levels remained in effect for all of 2003.

Given the reduced budget and without marketing efforts to support the goals the utilities were in a reactive mode with regard to the number of applications processed, that is, they had minimal ability to stimulate additional participation in the R-HVAC Program and were limited to processing rebates. Consequently, the Program Results section below will review 2003 program results in the context of these parameters and determine the impact of the suspension of marketing on the program.

**Program Results**

The following summarizes budgets, expenditures, participation levels and energy savings for the R-HVAC Program for 2001, 2002 and 2003:

| **Residential HVAC Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| | | | | |
| **Program Budget** | (000) | (000) | (000) | (000) |
| Res HVAC Electric | $12,720 | $17,139 | | |
| Res HVAC Gas | $6,002 | $7,079 | | |
| Combined/Total Electric & Gas | $18,722 | $24,218 | $13,970 | $56,910 |
| | | | | |
| **Expenditures** | (000) | (000) | (000) | (000) |
| Res HVAC Electric | $11,172 | $13,423 | | |
| Res HVAC Gas | $4,651 | $5,067 | | |
| Combined/Total Electric & Gas | $15,823 | $18,490 | $14,444 | $48,757 |
| | | | | |
| **Participants** | | | | |
| Res HVAC Electric | 15,113 | 17,982 | | |
| Res HVAC Gas | 8,275 | 9,010 | | |
| Total Electric & Gas | 25,389 | 28,994 | 24,786 | 79,169 |
| | | | | |
| **Energy Savings** | | | | |
| Res HVAC Electric | MWh | MWh | MWh | MWh |
| Annual Energy Savings | 12,224 | 15,703 | 14,621 | 42,548 |
| Lifetime Energy Savings | 183,354 | 235,546 | 219,320 | 638,220 |
| | | | | |
| | KW | KW | KW | KW |
| Annual Demand Savings | 10,761 | 13,825 | 12,254 | 36,840 |
| | | | | |
| Res HVAC Gas | Dtherm | Dtherm | Dtherm | Dtherm |
| Annual savings | 117,212 | 144,346* | 118,900 | 380,458 |
| Lifetime Savings | 2,344,252 | 2,886,917 | 2,172,633 | 7,403,802 |

*corrected from filed 2002 report

*Previously Proposed 2003 Goals*

The R-HVAC Program had several inter-related goals that were proposed for the 2003 program year. The following compares actual 2003 results to each of these proposed goals:

1. Goal: Increase the number of central air conditioner and heat pump rebates statewide to 5% above 2002 year-end participation rates. The actual number of rebates for 2002 was 17,982 so the goal for 2003 would have been 18,881.

   2003 result: 16,009 rebates were issued in 2003 which is 2,872 below the proposed goal. The goal was to increase participation rates by 5% above 2002 levels while actual results were approximately 10% below 2002 levels.

The utility program managers attribute the drop off in the participation level in large part to the lack of marketing. The utility program managers have indicated that in the past participation levels could be directly tied to marketing activities. Marketing activities were designed to achieve program goals. Without the ability to market, and given the fact that the 2003 program budget was reduced by over $5 million from 2002 levels, the utilities were essentially in a reactive mode, processing whatever applications were received.

Other factors that contributed to the reduced number of rebates were the weather and program changes made to implement smart growth policies. The number of air conditioners sold is typically a function of the weather and since 2003 was a relatively mild summer fewer air conditioners were most likely sold (information regarding the number of air conditioners actually sold in 2002 and 2003 is not available so this assumption is based on past experience). The fact that new homes built in non Smart Growth areas are no longer eligible for rebates under this program also contributed to the reduced number of rebates.

CEEEP believes the fact that over 16,000 rebates were processed in 2003, without any marketing activities, is an indication of the success of the program in past years. Since the programs inception in 2001 over 1,100 contractors have passed the North American Technical Excellence (NATE) certification test. These contractors become the sales force for the program informing customers of available rebates and selling high efficiency equipment directly to customers using the rebates as a tool.

CEEEP believes that given the suspension of most marketing activities, the participation levels achieved by the utilities was reasonable.

2. Goal: Train at least 750 HVAC technicians on either Manual J load calculations (including use of software applications), proper charging and airflow, technical material that must be understood to pass the North American Technical Excellence (NATE) certification test, duct sealing, duct design using ACCA Manual D, Energy Star sales techniques, and/or any other substantial form of training that is directly related to program goals. Any training conducted using essentially the same curricula provided by the program, including training provided by industry allies, shall count towards the goal.

   2003 result: 1,244 contractors were trained in 2003 substantially exceeding the goal. The large number of contractors participating in the training reflects the success of the program to date and the desire of contractors to participate in the program.

3. Goal: Add 500 New Jersey HVAC technicians to the list of those who are certified by NATE.

   2003 result: 427 contractors were added to the list of NATE certified technicians; 73 below the proposed goal. As more contractors become certified, identifying additional contractors becomes more difficult, i.e. the interested ones have already signed up. The

ability to attract additional contractors was also hampered by the suspension of marketing activities that generally promote the program.

4. Goal: Increase to 15% the fraction of 2003 central air conditioner buyers who, unprompted, define efficient equipment as either SEER 13, SEER 14, or "Energy Star-rated" up from 5% in the baseline study.

   2003 result: Achievement of this goal is not measurable due to the suspension of evaluation activities.

5. Goal: Increase the number of Energy Star qualified furnace and boilers rebated statewide to 7% above 2002 year end participation rates. The actual number of rebates for 2002 was 9,010 so the goal for 2003 would have been 9,641.

   2003 result: 8,777 rebates were issued in 2003 which is 864 below the goal. The goal was to increase participation rates by 7% above 2002 levels while actual results were approximately 3% below 2002 levels.

   The reasons for the drop in participation levels set out under Goal 1 above are applicable to this goal as well.

6. Goal: Increase the statewide market share for Energy Star qualified furnaces to 35%.

   2003 result: Achievement of this goal is not measurable due to the suspension of the evaluation activities.

7. Goal: Provide Energy Star sales training to at least 150 sale representatives of HVAC contractors.

   2003 result: 172 representatives were trained exceeding the goal by 22.

8. Goal: Hold at least one individual outreach meeting to explain and promote program offerings (e.g. rebates, sales training, other training) with at least 200 of the 400 largest HVAC contractors.

   2003 result: Outreach meetings were held with 210 of the State's 400 largest HVAC contractors exceeding the goal by 10.

9. Goal: Increase to 15% the fraction of recent furnace buyers who are aware of the availability of high efficiency equipment, and identify either 90% AFUE, 90% efficiency or Energy Star-rated as the standard for high efficiency.

   2003 result: Achievement of this goal is not measurable due to the suspension of the evaluation activities.

*Previously Proposed Minimum Requirements for Program Administration*

The following are the minimum requirements for R-HVAC Program administration that were proposed for 2003:

- Collectively (all seven utilities) implement all elements of the program in a consistent manner across the entire state.
- Collectively employ best efforts to implement planned program activities in a timely manner.
- Collectively train at least 500 HVAC technicians (electric) and 100 HVAC technicians (gas) in the areas identified above.

Based on a review of utility activities and rebates issued by each utility, CEEEP believes that the program was consistently implemented by all seven utilities across the state and that the utilities used best efforts to implement the program in a timely manner. Of the 1,244 contractors trained in 2003, over 500 were electric technicians and over 100 were gas technicians. Therefore, each of the above minimum requirements for program administration was met.

**Recommendations**

This program was recognized by the American Council for an Energy Efficient Economy (ACEEE) as one of the best energy efficiency programs in the nation. It was well on its way towards market transformation achieving 30% market share for air conditioners compared to 5% nationally. 2003 results indicate the strength of the program with rebates slipping by only 10% despite the suspension of marketing activities.

The aspects of this program that made it a national model include the program process requirements for proper sizing, charging and duct integrity for air conditioning equipment. Studies have shown that proper sizing and charging can contribute as much to the savings as the purchase of high efficiency equipment. The program should focus on bringing additional contractors into the program as a way to insure systems are properly sized, charged and installed.

CEEEP believes that the following steps can help get the program back on track towards achieving market transformation which will ultimately result in the continued installation of high efficiency equipments with lower or no rebates:

1. Consider approval of additional marketing activities. Marketing activities should be put in place well before the cooling season for cooling equipment and before the heating season for heating equipment. CEEEP is convinced there is a strong link between marketing activities and program participation levels and recommends that the BPU consider approval of additional marketing activities. This is especially true given that it now appears that the new program manager will not be up and running until 2005.

2. Approximately 1100 HVAC contractors have been NATE certified since the programs inception in 2001. This represents approximately 10 to 20% of the contractor market leaving a large number of contractors not yet trained or certified. As additional contractors are certified and learn of the program, they become the programs sales force. Future efforts should continue to focus on training and certifying additional contractors.

3. The program application process was modified so that NATE certified contractors are no longer required to perform Manual J calculations for air conditioning rebates making it easier for them to participate in the program. This aspect of the program should be promoted as an enticement for additional contractors to become NATE certified.

4. 2004 program evaluation activities should include an assessment of the market share and consumer awareness goals identified above and a review of the current rebate levels. CEEEP will include these elements in the proposed evaluation plan that is under development.

# Residential New Construction Program

### "New Jersey Energy Star Homes Program"

## Program Description

The following summarizes the program description approved by the Office of Clean Energy in the Memorandum of Understanding with the utilities:

The Residential New Construction Program (RNC) is designed to increase the efficiency and environmental performance of residential new construction in the State.

The utilities designed the RNC Program with the long-term goal of transforming the market to one in which all new homes are built at least as efficiently as the current EPA ENERGY STAR homes standard. The utilities identified a number of market barriers to efficiency investments in new construction including: (1) split incentives (i.e. builders who make design decisions will not pay the additional costs associated with those decisions); (2) lack of information on the benefits of efficiency and environmental performance (on the part of consumers, builders, lenders, appraisers, realtors and others); (3) limited technical skills to address key elements of efficiency; and (4) inability of consumers, lenders, appraisers and others to differentiate between efficient and standard homes. The RNC Program plan employs several key strategies to overcome these barriers:

- Incentives to builders to construct homes to program standards.
- Marketing assistance to builders of ENERGY STAR rated homes.
- Technical assistance to builders and their subcontractors.
- Home energy ratings and ENERGY STAR certification to qualified homes.
- Support to the Department of Community Affairs and US EPA to foster the development of market-based mechanisms to facilitate market transformation, including a uniform statewide energy rating system, and accreditation of raters through the establishment of a NJ Home Energy Raters Alliance.
- Technical support/training municipal code officials on residential energy code updates and implementation.

## Program Delivery

In 2003, the RNC Program was delivered by the State's seven natural gas and electric utilities.

## Program Goals and Minimum Requirements for Program Administration

Goals and minimum requirements for program administration were not adopted for the RNC Program for the 2003 program year. However, the November 1, 2002 filing of the Collaborative included proposed 2003 goals and minimum requirements for program administration. These proposed goals will be used as the baseline for assessing 2003 program results for the RNC Program.

The RNC Program was modified in 2003 to make the changes necessary to incorporate the Governor's policy initiative to support development and redevelopment in Smart Growth areas. However, projects that were signed into the program prior to the changes that were implemented in response to the Smart Growth initiative were grandfathered such that previous commitments for incentives for homes constructed in non-Smart Growth areas were honored. Much of the construction activity in 2003 involved grandfathered projects.

Marketing plans that were developed to support the achievement of these goals were suspended in 2003 while the BPU considered changes to the administrative structure of the programs. Without marketing efforts to support the goals the utilities were in a reactive mode with regard to the number of applications processed, that is, they had minimal ability to stimulate additional participation in the program. Consequently, the Program Results section below will review 2003 program results in the context of these parameters and determine the impact of the suspension of marketing on the program.

## Program Results

The following table summarizes budgets, expenditures, participation levels and energy savings for the RNC Program for 2001, 2002 and 2003:

| **Residential New Construction Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| | | | | |
| **Program Budgets** | $15,758 | $14,677 | $19,669 | $50,104 |
| | | | | |
| **Expenditures** | (000) | (000) | (000) | |
| Actual Expenditures | $6,813 | $10,945 | $15,365 | $33,123 |
| Committed Expenditures | $6,325 | $25,135 | $30,765 | |
| Actual + Committed | $13,138 | $36,080 | $46,130 | |
| | | | | |
| **Participants** | | | | |
| Actual | | 1,881 | 4,936 | 6,817 |
| Committed | 4,553 | 10,490 | 12,168 | |
| Actual + Committed | 4,553 | 12,371 | 17,104 | |
| | | | | |
| **Energy Savings** | | | | |
| ***Actual*** | | | | |
| Electric | MWh | MWh | MWh | MWh |
| Annual savings | 119 | 3,262 | 4,773 | 8,154 |
| Lifetime savings | 2,376 | 65,231 | 95,460 | 163,067 |
| | | | | |
| | KW | KW | KW | KW |
| Annual demand savings | 11 | 3,415 | 11,201 | 14,627 |
| | | | | |
| Gas | Dtherm | Dtherm | Dtherm | Dtherm |
| Annual savings | 356 | 83,638 | 136,914 | 220,908 |
| Lifetime Savings | 7,120 | 1,672,762 | 2,738,286 | 4,418,168 |
| | | | | |
| ***Committed*** | | | | |
| Electric | MWh | MWh | MWh | |
| Annual savings | 6,574 | 30,773 | 22,039 | |
| Lifetime Savings | 131,481 | 504,649 | 440,776 | |
| | | | | |
| | KW | KW | KW | |
| Annual demand savings | 6,547 | 31,455 | 39,030 | |
| | | | | |
| Gas | Dtherm | Dtherm | Dtherm | |
| Annual savings | 100,752 | 616,850 | 606,325 | |
| Lifetime Savings | 2,015,046 | 12,337,003 | 12,126,506 | |

*Previously Proposed 2003 Goals*
The RNC Program had several inter-related goals proposed for the 2003 program year. The following compares actual 2003 results to each of these proposed goals:

1. Goal: Enroll at least 20% of the total New Jersey permits issued for residential new construction dwelling units (single family, townhouse and multi-family) with commitments to build to the Energy Star Homes program's efficiency standards when the units are constructed.

   2003 result: 12,168 homes were enrolled in the RNC Program 2003. This represents 37% of the 32,984 permits issued in 2003 exceeding the goal by 17%.

   This program grew significantly with 4,936 homes certified in 2003 compared to 1,881 in 2002. Most of the activity in 2003 was for homes built during the year that were signed into the program in previous years.

   The RNC Program was modified in 2003 to make the changes necessary to incorporate the Governor's policy initiative to support development and redevelopment in Smart Growth areas. The utility program managers have indicated that a large number of applications were received in early 2003 prior to the expiration of the deadline for grandfathering projects not located in Smart Growth areas. They believe that the increase in commitments from 10,490 in 2002 to 12,168 in 2003 was in part due to the large number of homes signed into the program prior to the grandfathering deadline. The utility program managers have also indicated that preliminary indications are that the number of homes being signed into the program in 2004 have dropped from 2003 levels, which they attribute to the fact that homes located in non Smart Growth areas are no longer eligible for incentives. However, given the large numbers of homes that were signed into the program in 2002 and 2003 that have yet to be built, program managers and the Office of Clean Energy should be carefully monitoring program activity to assess impacts on future year's program budgets.

   The utilities had proposed lowering incentive levels starting in 2003. However, rebate levels were not lowered due to concerns over production builders reactions to the program changes made to implement the Smart Growth initiative. However, given the significant growth in the number of homes committed into the program, consideration should be given to establishing a multi-year schedule for lowering incentive levels.

   The majority of the homes rebated under the RNC program are built by production builders. Since in 2002 all of the major production builders agreed to build all of their new homes to Energy Star standards, combined with the fact that most of the program activity in 2003 was due to homes signed into the program in previous years, the suspension of marketing activities had minimal impact on results in 2003.

   While in 2003 the number of completed homes rose by a factor of over 2.6 compared to 2002 levels, reported energy savings increased by only about 50%. The lower energy savings per home completed is due primarily to the fact that the baseline against which

savings are measured was increase to reflect upgrades in the building code that were implemented in 2002 from the 1993 BOCA National Energy Conservation Code to the 1995 CABO Model Energy Code.

2. Goal: Certify at least 3,000 Energy Star Homes by December 31, 2003.

   2003 result: 4,936 homes were certified in 2003, exceeding the goal by 1,936. The reasons for the increase in participation levels set out under Goal 1 above are applicable to this goal as well.

3. Goal: Train at least 325 builders, subcontractors and architects on program elements and aspects that will improve the energy efficiency, performance and sales of homes they design and build.

   2003 result: 351 builders were trained exceeding the goal by 26 builders.

*Previously Proposed 2003 Minimum Requirements for Program Administration*

The following are the minimum requirements for RNC Program administration that were proposed for 2003:

- Collectively (all seven utilities) implement all elements of the program in a consistent manner across the state.
- Collectively employ best efforts to implement planned program activities in a timely manner.
- Individually achieve at least 60% of the enrollment participant goal numbers for a projected total of 2,760 committed homes (i.e. 60% of the statewide goal of 20% of residential permits issued for 2003). Since the 2003 goals were never approved, these minimum requirements were not calculated.

Based on its review of utility activities and homes certified by each utility, CEEEP believes that the program was consistently implemented by all seven utilities across the state and that the utilities used best efforts to implement the program in a timely manner. The projected total of committed homes was exceeded by 9408 homes. Therefore, each of the above minimum requirements for program administration were met or exceeded.

**Recommendations**

Program participation levels increased from 1,881 homes certified in 2002 to 4,936 homes certified in 2003. This represents an increase of over 260% from 2002 to 2003 and places New Jersey at the forefront regarding the percentage of new homes built that meet or exceed Energy Star Home standards. However, the success of this program warrants consideration of several recommendations set out below:

1. Carefully monitor program activity to assess impact on future year budgets. Over 20,000 homes were committed to the program in 2002 and 2003 that may be built in the next two years. Program managers should carefully monitor the status of committed projects and future sign ins to insure the program does not have adverse impacts on future budgets.

2. Consideration should be given to establishing a multi-year schedule of reduced incentive levels, in part to reduce the impact on future budgets and in part in recognition of the success of the program.

3. The RNC Program had implementation contractor costs of $4.1 million representing over 26% of program costs. Discussions have taken place in the past regarding ways to reduce these costs such as lowering the number of inspections, especially for builders constructing large developments. CEEEP believes that it is time to move beyond the discussion stage and to take proactive steps to reduce these costs as soon as possible.

4. The program requires that once utilities approve an application for a new home or development, that the builder has two years to build the home or the approval expires. There is currently no consistent policy across the utilities regarding this program requirement. CEEEP recommends that a consistent policy be developed. The utilities have begun the process of developing a consistent statewide policy regarding how applications are treated at the end of the two year period and will provide a proposed policy to the Office of Clean Energy for approval.

## Residential Energy Star Products Program

"ENERGY STAR Products Program"

**Program Description**

The following summarizes the program description approved by the Office of Clean Energy in the Memorandum of Understanding with the utilities:

The Residential Energy Star Products Program promotes the sale and purchase of Energy Star rated and labeled residential products including lighting, appliances and windows. The program was modified substantially in 2003 as discussed below.

The long-term goal of the Energy Star Products Program as designed by the utilities is to transform the market into one in which ENERGY STAR residential products become standard. The Energy Star Products Program employs several key strategies to accomplish this goal, including:

- Educating consumers on their energy usage and the role that energy efficiency plays in reducing their overall residence's energy consumption.
- Providing a retail infrastructure whereby energy efficient products becomes the norm in a consumers buy decision.
- Marketing and training support for retailers, manufacturers and contractors selling ENERGY STAR products.
- Supporting the development of State appliance standards (e.g. torchieres, & ceiling fans), minimum federal appliance efficiency standards and ENERGY STAR appliance specifications, as appropriate.
- Leveraging national programs, promotions, marketing materials, and advertising.
- Targeted rebates or other incentives to reduce first cost barriers of ENERGY STAR lighting, appliances, windows and thermostats.

In 2002, the Energy Star Program was run as three separate programs: lighting, appliances and windows. In 2003, the three programs were combined into one ENERGY STAR Products program.

Also, in 2002 the Energy Star Program recruited retailers, manufacturers and contractors selling ENERGY STAR products into the program. The program included marketing and training support for these entities as well as targeted promotions of ENERGY STAR products. In 2003, the program was placed in the "maintenance mode" meaning that the program not expand its marketing and recruitment activities beyond those already committed, pending a review of the inclusion of a broad based consumer element into the program and a review of the program by the Clean Energy Council.

In 2003, two broad based consumer initiatives were added to the Energy Star Products Program; rebates for ENERGY STAR room air conditioners and incentives for ENERGY STAR lighting. The Energy Star Products Program was also reviewed by the Clean Energy Council, which recommended that the "maintenance mode" restrictions be eliminated allowing the program to recruit additional retailers.

In early 2003 the Residential Retrofit Program, which provides no-cost home energy audits to residential customers, was terminated. This program was reinstated in August of 2003 as part of the Energy Star Products Program.

**Program Delivery**

In 2003 the Energy Star Products Program was delivered by the State's seven gas and electric utilities.

**Program Goals and Minimum Requirements for Program Administration**

Goals and minimum requirements for program administration were not adopted for the Energy Star Products Program for the 2003 program year. However, the November 1, 2002 filing of the Collaborative included proposed 2003 goals and minimum requirements for program administration. Some of the proposed goals for the Energy Star Products Program, such as maintaining retailer partner commitments, are relevant to the assessment of the 2003 program results. Some goals, such as tracking market, are not relevant since the evaluation work needed to assess achievement of these goals was suspended.

Marketing plans that were developed to support the achievement of the proposed 2003 goals were suspended in 2003 while the BPU considered changes to the administrative structure of the programs. While certain marketing activities were approved for this program, they were primarily aimed at supporting the two new consumer initiatives. Without marketing efforts to support the goals the utilities were in a reactive mode with regard to the number of program participants, that is, they had minimal ability to stimulate additional participation in the program. This program was also placed in the maintenance mode in early 2003 meaning that the utilities were not permitted to recruit new participants into the program. Consequently, the Program Results section below will review 2003 program results in the context of these parameters and determine the impact of the suspension of marketing on the program.

**Program Results**

One of the proposed goals for 2003 was to develop and implement a methodology for tracking market share of ENERGY STAR products. The intent was that the planned evaluation would include a recommendation regarding how to calculate energy savings from the program, or more particularly, how to calculate the number of products sold as a result of the program rather than from normal market activities. Since the evaluation efforts were placed on hold this was not completed and therefore, with the exception of the 2003 room air conditioner and lighting initiatives, the program has not reported participants, energy savings or emissions reductions. The following summarizes Energy Star Products Program expenditures for 2001, 2002 and 2003 and the participants and energy savings for the two new initiatives implemented in 2003.

| **Residential ENERGY STAR Products Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| **Program Budgets*** | ($000) | ($000) | ($000) | ($000) |
| Energy Star Windows | $1,010 | | | |
| Energy Star Lighting | $1,661 | | | |
| Energy Star Appliances | $1,210 | | | |
| Maintenance | | | $882 | |
| Room Air Conditioning | | | $2,472 | |
| Lighting Promotion | | | $3,800 | |
| Home Energy Audit | | | $151 | |
| Total Energy Star Budget | $3,881 | $7,533 | $7,305 | $18,719 |
| | | | | |
| **Expenditures** | ($000) | ($000) | ($000) | |
| Energy Star Windows | $276 | | | |
| Energy Star Lighting | $1,661 | | | |
| Energy Star Appliances | $1,210 | | | |
| Combined Program (02) | | $2,803 | | |
| Energy Star Maintenance (03) | | | $911 | |
| Room AC (03) | | | $872 | |
| Lighting and Other (03) | | | $4,219 | |
| Home Energy Audit | | | $303 | |
| Total | $3,147 | $2,803 | $6,305 | $12,255 |
| | | | | |
| **Participants (03 only)** | | | | |
| Room Air Conditioner | | | 25,387 | |
| Lighting Promotion | | | 1,496,339 | |
| Home Energy Audit | | | 8,762 | |
| | | | | |
| **Energy Savings** | | | | |
| Annual Savings | | | MWh | |
| Room AC | | | 1,432 | |
| Lighting | | | 61,630 | |
| Annual Demand Savings | | | kW | |
| | | | 1,499 | |
| Lifetime Energy Savings | | | MWh | |
| Room AC | | | 14,318 | |
| Lighting Promotion | | | 359,018 | |

* In 2001 the program was run as three separate programs that were merged into the Energy Star Products Program in 2002. In 2003, the Energy Star products program was expanded to include two new initiatives, a direct rebate for window AC and a lighting promotion that provided incentives for the purchase of CFLs. Also in 2003, the home energy audit program was moved into the Energy Star program.

*Previously Proposed 2003 Goals*

The ENERGY STAR Products program had several common, inter-related goals proposed for the 2003 program year. The following compares actual 2003 results to each of these proposed goals:

1. Goal: Maintain retailer ENERGY STAR partner commitments. This includes placing marketing materials in the stores that promote ENERGY STAR products, training sales associates in the benefits of and how to sell ENERGY STAR products, and continuing to sponsor co-op advertising and product promotions that at least 15% of enlisted program retailers of each of the three product categories participate in by year-end.

   2003 result: This goal was exceeded. The program continued to provide program support to ENERGY STAR partners that were existing participants in the three product categories. This support included the ongoing placement of point of purchase marketing material in the stores and sales training, on an as needed basis. In addition, over 90% of participating lighting and appliance retailers participated in co-op advertising and product promotions that were offered through special appliance (Room Air Conditioners Rebate Program) and lighting (Change A Light) initiatives.

   While the two special promotions resulted in the participation of many retailers, the program could have performed better if additional support was given to the retailers for other program activities and to promote other ENERGY STAR products. The utility program managers believe the results of this program could be enhanced with additional marketing activities. The utilities believe that the placement of this program in the maintenance mode for much of 2003 and suspension of marketing activities negatively impacted consumer awareness of the ENERGY STAR Products program and participation in the room air conditioner initiative. Efforts should be made to strengthen relationships with participating retailers through increased support activities. The new program manager should also be charged with undertaking efforts to recruit additional retailers into the program that were suspended in 2003.

2. Goal: Develop a broad based consumer promotion designed to have the most benefit to NJ consumers with input from the BPU, the Ratepayer Advocate and industry. The ENERGY STAR products to be promoted (e.g. CFLs, clothes washers) will be selected in consultation with the BPU, the Ratepayer Advocate and industry experts.

   2003 result: A broad based lighting promotion was implemented in 2003 in conjunction with the US Environmental Protection Agency's "Change a Light, Change the World" campaign. This effort was one of 2003's most successful, with the highest level of savings delivered, 61,630 MWh, per dollar expended, $4.219 million.

   EPA sponsored regional or national Energy Star promotions offer a way to leverage costs by having manufacturers and retailers contribute to the promotions. Several opportunities for participating in EPA sponsored promotions, such as the clothes washer initiative, were missed in 2003. Several of these initiatives are currently planned for 2004. CEEEP believes the Energy Star initiatives can deliver significant benefits and should be pursued in future program years.

3. Goal: Complete all planned 2003 evaluation activities identified in the Evaluation plan by revised dates. At minimum these will include the process evaluation and market progress reports that were started in March of 2002 and placed on hold in July 2002 pending BPU review.

   2003 result: This goal was not met since all evaluation activities were suspended.

4. Goal: Develop and implement a methodology for tracking market share of Energy Star lighting, windows, and appliances sold to consumers in New Jersey.

   2003 result: This goal is not measurable due to suspension of evaluation activities. As noted above, one of the proposed goals for 2003 was to develop and implement a methodology for tracking market share of ENERGY STAR products that would include a recommendation regarding how to calculate energy savings from the program, or more particularly, how to calculate the number of products sold as a result of the program rather than from normal market activities. Since the evaluation efforts were placed on hold this was not completed and therefore, with the exception of the 2003 room air conditioner and lighting initiatives, the program has not reported participants, energy savings or emissions reductions since its inception in 2001.

*Previously Proposed Minimum Requirements for Program Administration*

The following are the minimum requirements for program administration for the Energy Star Products Program that were proposed for program year 2003:

- Collectively (all four electric utilities) implement the program in a consistent manner across the entire state.
- Collectively employ best efforts to implement planned program activities in a timely manner
- Collectively complete three of the four program goals listed above.

Based on its review of utility activities and homes certified by each utility, CEEEP believes that the program was consistently implemented by all seven utilities across the state and that the utilities used best efforts to implement the program in a timely manner. The third minimum requirement was not met since two of the four goals concerned evaluation activities that were suspended by the BPU.

**Recommendations**

1. The room air conditioner component of the program resulted in 25,387 rebates which is well below the estimated participation levels that ranged from approximately 50,000 to 115,000 rebates being issued. The lower than expected participation levels are attributable to two key factors.

   The first factor is that the number of Energy Star room air conditioners sold is in large part a function of the number of units ordered and stocked by retailers. When we experience very hot weather for a consecutive number of days retailers often sell every

unit they stock. Therefore, the number of Energy Star units sold is a function of the number of units in the stores. Retailers typically order their stock during the winter months. Unfortunately, the final details of this new program were not approved until after retailers had placed their orders. Some retailers were able to move stock from stores in other states and did so based on the rebate program. To avoid this occurrence again, retailers need to be informed of program details in advance of when they order their stock. This has occurred for the 2004 program.

The second factor concerns the lack of marketing. Initial estimates of participation levels noted that participation levels will be greatly influenced by the type and extent of education and outreach that is implemented to support the program. The utility program managers believe the lack of sufficient marketing contributed to the lower than expected participation rates.

CEEEP believes additional marketing activities should be considered in future years to support this product initiative.

2. In 2003, the Energy Star lighting incentive program was launched. Designed to offer energy efficient lighting to NJ consumers at discounted prices, the program solicited contracts with 15 lighting manufacturers with a total of 705 stores participating. Funds were allocated to provide approximately 1.27 million Energy Star compact florescent bulbs to NJ consumers.

   The response to the lighting incentive program solicitation was greater than expected. 49 proposals were received requesting funding of over $7.4 million. 47 projects were approved representing 3.9 million in incentives and $380,000 of co-op funding. Over 1.49 million Energy Star lighting products were sold during the promotion. The lighting component of this program delivered annual savings of 61,630 MWh representing over 20% of the total statewide annual energy savings for measures installed in 2003 from all programs while program expenditures were $4.219 million or only 4.3% of overall spending.

   Given the success of this initiative, CEEEP believes consideration should be given to expansion of this effort in future years and to inclusion of promotions for other Energy Star Products. CEEEP notes that the program was expanded to include clothes washers in 2004 and that consideration is being given to including windows in 2005.

3. The Home Energy Audit program was terminated in early 2003 and then restarted in the 2$^{nd}$ half of 2003. Participants and expenditures were down compared to 2002 for this reason.

   CEEEP believes this program offers an important consumer education tool and should be continued. Efforts are underway to review proposed changes to the program to be implemented in 2004.

4. Due to the suspension of evaluation activities, program participation levels and energy and emission savings have not been calculated for this program with the exception of the room air conditioner and lighting initiative. Evaluation efforts should include the development of a methodology for tracking market share and a determination of program energy savings since the programs inception in 2001. CEEEP will include a recommendation to include these items in the evaluation plan currently under development.

5. Certain marketing activities for the Energy Star Products program proposed by the utilities were not approved based on the expectation that the BPU's umbrella marketing campaign would be up and running. Consideration should be given to approval of additional marketing activities if the BPU's campaign is delayed further.

## Residential Low Income Program

"New Jersey Comfort Partners"

### Program Description

The following summarizes the program description approved by the Office of Clean Energy in the Memorandum of Understanding with the utilities:

The Residential Low Income Program ("Low-income Program") is designed to improve energy affordability for low-income households. The utilities identified a number of market barriers that must be overcome to achieve this objective including: (1) lack of information on either how to improve efficiency or the benefits of efficiency; (2) low income households do not have the capital necessary to upgrade efficiency or even, in many cases, keep up with regular bills; (3) low income households are the least likely target of market-based residential service providers due to perceptions of less capital, credit risk and/or high transaction costs; and (4) split incentives between renters and landlords. The Low-income Program addresses these barriers through the following objectives:

- Serving the maximum number of households utilizing the available budget.
- Direct installation of all cost-effective energy efficiency measures (addressing all fuels with a comprehensive approach).
- Comprehensive, personalized individual energy education and counseling.
- Maximizing total cost-effective energy savings through the use of measure-specific protocols.
- Coordination with other service providers and agencies.
- Leveraging of funds.
- Arrearage reduction for participants who agree to gas and/or electric utility company payment plans.

The NJ Department of Community Affairs implements the Weatherization Assistance Program that also provides weatherization services to low-income programs. Much discussion took place in the Clean Energy Council's low-income working group concerning the relationship between the two programs. As discussed below, discussions are currently underway to explore opportunities to deliver the programs in a more coordinated fashion and to find ways to deliver the two programs more efficiently.

### Program Delivery

In 2003, the Low-Income Program was delivered by the State's seven natural gas and electric utilities. Electric and gas energy saving measures and energy education services will be performed through the same program delivery contractors so that eligible households receive both gas and electric efficiency measures simultaneously.

### Program Goals and Minimum Requirements for Program Administration

Goals and minimum requirements for program administration were not adopted for the 2003 programs. However, the November 1, 2002 filing of the Collaborative included proposed 2003

goals and minimum requirements for program administration. These proposed goals will be used as the baseline for assessing 2003 program results for the Low-Income Program.

## Program Results

The following summarizes budgets, expenditures, participation levels and energy savings for the Low-income Program for 2001, 2002 and 2003:

| **Residential Low-income Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| | ($000) | ($000) | ($000) | |
| **Program Budgets** | $15,224 | $15,497 | $16,134 | $46,855 |
| | | | | |
| **Expenditures** | ($000) | ($000) | ($000) | |
| Comfort Partners | $10,354 | $13,268 | $14,756 | |
| Senior Weatherization Pilot | NA | NA | $679 | |
| Total | $10,354 | $13,268 | $15,435 | $39,057 |
| | | | | |
| **Participants** | | | | |
| Comfort Partners | 5,848 | 5,937 | 6,268 | |
| Senior Weatherization Pilot | NA | NA | 393 | |
| Total | 5,848 | 5,937 | 6,661 | 18,446 |
| | | | | |
| **Energy Savings** | | | | |
| Comfort Partners & Pilot | | | | |
| Electric | MWh | MWh | MWh | MWh |
| Annual Savings | 7,386 | 5,196 | 5,774 | 18,356 |
| Lifetime Savings | 147,716 | 83,203 | 106,522 | 337,441 |
| | | | | |
| | KW | KW | KW | KW |
| Annual Demand Savings | 1,032 | 627 | 868 | 2,527 |
| | | | | |
| Gas | Dtherm | Dtherm | Dtherm | Dtherm |
| | | | | |
| Annual savings | 91,776 | 73,523 | 65,035 | 230,334 |
| Lifetime Savings | 1,835,511 | 1,470,460 | 1,284,711 | 4,590,682 |
| | | | | |

*Previously Proposed 2003 Goals*

1. Goal: Participant targets for each utility for the low-income component in 2003 are displayed in the table below. The table figures are not additive. The total statewide participation target was 6045 (includes 400 for the Senior Weatherization), which is the sum of the electric participants (all households have electric service). The 5,069 gas participants are a subset of this total.

| | Electric | | | | Gas | | | |
|---|---|---|---|---|---|---|---|---|
| | PSE&G | JCP&L | Conectiv | RECO | PSE&G | NJNG | SJG | NUI |
| Goal | 4,000 | 1900* | 525 | 20 | 3,400 | 733 | 300 | 636 |
| Actual | 4,038 | 2070 | 531 | 22 | 3,272 | 880 | 485 | 670 |

2003 results: 6,661 homes were treated in 2003 which exceeds the statewide goal by 223 participants. Each of the utilities also exceeded the individual utility proposed goal for participants.

The low-income program continued its upward trend exceeding the number of low-income homes treated in 2002. Program participation levels for the low-income program are driven by budgets and goals. That is, the utilities manage the program to meet specific goals and participation levels are limited by the established budget. CEEEP believes that in 2003 the utilities did a good job of managing to goals and budget exceeding the participation goals by 223 while coming in marginally under budget.

2. Goal: The proposed 2003 statewide enrollment goal in the arrearage reduction program was 3,400. Customers who participate in both the gas and electric utilities' arrearage programs are counted by each utility. The following table shows the proposed individual utility targets for enrollment in the arrearage reduction plans and actual enrollment levels achieved in 2003:

| | Electric | | | | Gas | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | PSE&G | JCP&L | Conectiv | RECO | PSE&G | NJN | SJG | NUI | Total |
| Goal | 1,200 | 660 | 100 | 5 | 1,020 | 150 | 125 | 140 | 3,400 |
| Actual | 840 | 836 | 105 | 0 | 779 | 70 | 134 | 146 | 2,910 |

2003 result: Actual enrollments in 2003 were below the proposed goal for three utilities and the total enrollment fell 490 customers short of the proposed statewide goal of 3,400. The BPU recently directed that the arrearage reduction component of the Low-income Program be transferred to the Universal Service Fund (USF). In 2003 the utilities began to wind down the arrearage component of the low-income program as plans were developed to transfer it to USF. The utilities are currently finalizing the transition.

3. Goal: An evaluation of the low-income program was recently completed by Apprise Inc. with reports submitted in 2002 and 2003. The evaluation measured other important performance indicators identified in the evaluation plan. These included the comprehensiveness of treatment of efficiency opportunities (or, conversely, magnitude of missed opportunities). The program savings goals in 2003 were to achieve 10% average

savings on total electric use for electrically heated homes and 15% average savings on total gas use for gas heated homes. The savings calculations initially were to be based on energy savings protocols filed with the BPU for approval on July 9, 2001. These protocols were adjusted as baseline and impact evaluation data became available. The following sets how actual results compared to the above goal:

*Comprehensiveness*
The program is designed to allow for custom approaches in the home and allows any measure that will cost-effectively save energy making it highly comprehensive.

*Savings Protocols*
While 2003 savings levels have not yet been evaluated, they are expected to in line with the levels achieved in 2002 which would exceed the goal. The impact evaluation of participants from 2002 showed:

- Electric baseload net savings of 11.7% of pre-treatment usage annually per home—787 kwh (+/-123 kwh—90% statistical confidence interval).
- Electric heating net savings of 8.3% annually per home--1082 kwh (+/-640 kwh—90% statistical confidence interval). Small sample size of participants (64) and the control group (19).
- Gas heat net savings of 6.9% annually per home--82 ccf (+/-16 ccf—90% statistical confidence interval)

2002 was the first full year of the statewide Comfort Partners program, and the evaluation was conducted to be sure the program design was on the path to success. The evaluators determined that "the results are generally consistent with savings projections from the working group's savings protocols."

Pre-treatment usage levels of the 2002 participants are very low for electric heat customers and low to moderate for gas heat and electric baseload. The study showed "savings increased with higher pre-treatment usage." The evaluators recommended that "Clearly targeting high use households can lead to dramatically higher program savings." Comfort Partners did not target high use customers in 2002 due to the high participant goals, open enrollment and the dual fuel nature of the program (a customer may be a high gas user but a low electric user or vice-versa). Based on these evaluation results, the utility working group began targeting higher use customers in 2003 and 2004.

*Previously Proposed 2003 Minimum Requirements for Program Administration*

The following are the minimum requirements for program administration for the Low-income Program that were proposed for program year 2003:

- Collectively reach a minimum of 60% of both the participation and arrearage enrollment program goals.

- Complete on time at least three of the four (this appears to be a typographical error since the table includes five activities) activities identified in the table below.

| Specific Activities |
|---|
| Completion of procedures/specifications manual revision |
| Implement consistent 3rd party Quality Assurance procedures/schedules |
| Introduce quarterly Working Group management reports |
| Roll out seniors Pilot |
| Implement single statewide data tracking/reporting system |

The first minimum requirement above was exceeded. The following sets out actual results for each of the activities included in the table above:

1. The Apprise evaluation found that **"**The Comfort Partners procedures manual, energy education notebooks, specifications and procedures manuals are in place and provide consistent statewide quality. Specifications represent a commendable breadth of technical documentation" to furnish necessary guidance for contractors. As new information becomes available, the working group continues to make changes to procedures and specifications. During 2003 the Working Group hired McGrann Associates to assist with the updating of the specifications manual. Major changes to the specifications manuals included but were not limited to: damming and air sealing around heat producing fixtures prior to insulating, air sealing lowered ceilings, pre-fabricated attic pull-down stair covers.

   The evaluation recommended more consistent delivery of energy education by the various contractor crews. The Working Group submitted a proposal to develop energy education training videos. This project was approved and is in the production phase with an expected delivery date of September 2004...

2. The utilities developed consistent quality assurance procedures and quarterly reporting.
3. The utilities developed monthly and quarterly management reports to track budget, spending, participants, arrears, etc.
4. The Senior's pilot began in February 2003.
5. The recommendation to implement single statewide data tracking/reporting system was put on hold pending a decision regarding future program management.

Based on the above CEEEP believes the minimum requirements for program administration were met.

**Recommendations**

CEEEP is currently facilitating discussions between the utility program managers, DCA, the Office of Clean Energy, the Ratepayer Advocate and the NJ Community Action Association (the Low-income Working Group) to explore ways to better coordinate the Comfort Partners Program and DCA's Weatherization Assistance Program. The discussions were supplemented with a recent study performed by Apprise Inc. that provided detailed documentation of the existing program models.

Apprise concluded that while the differences between the programs would make it challenging to have total program alignment in one integrated approach, there are many benefits to be gained from some level of coordination. The Working Group discussions have focused on a number of specific areas to identify opportunities for better coordinating the programs including: outreach and intake; customer targeting; staff training; service delivery; information tracking and reporting; quality control and evaluation. The goal is to develop a single system for qualifying eligible customers, a single system for assigning work to eliminate duplication and aligning the programs as much as possible. CEEEP anticipates that a proposal that includes ways to significantly increase the efficiencies of the programs will be submitted to the BPU for consideration by the end of July.

Based on the above, CEEEP recommends the following specific actions regarding the low-income program:

1. The BPU should give prompt consideration to the forthcoming proposal from the Working Group described above.

2. The 2004 program plan recommended increasing participation levels by 1500 low-income homes. Discussions on how to accomplish the increase in participation levels have been placed on hold while the utilities and DCA discuss ways to better coordinate their respective programs. This issue should be considered in 2004 to insure appropriate actions are taken to increase participation levels as approved by the BPU.

# C&I Energy Efficient Construction Program

**"New Jersey SmartStart Buildings®"**

**Program Description**

The following summarizes the program description approved by the Office of Clean Energy in the Memorandum of Understanding with the utilities:

The C&I Energy Efficient Construction Program (C&I Program), which is marketed as *New Jersey SmartStart Buildings*, was in 2003 the umbrella name for four individual programs for targeted market segments: 1) Commercial New Construction, 2) Commercial Retrofit, 3) Abbott Schools and 4) Non-Abbott Schools. The C&I Programs were designed by the utilities to:

- Capture lost opportunities for energy efficiency savings that occur during customer-initiated construction events (i.e., when customers normally construct buildings or buy equipment).
- Achieve market transformation by helping customers, designers and specifiers to make energy efficient equipment specification, building /system design, lighting design, and commissioning standard parts of their business practices.
- Stimulate small commercial customer investments in energy efficiency measures.
- Help facilitate effective implementation of New Jersey's new commercial code and future upgrades to that code.

The C&I Programs were designed by the utilities to address market barriers to efficient building construction and design on the part of developers, designers, engineers, and contractors including: unfamiliarity or uncertainty with energy efficient building technologies and designs; bias toward first cost versus operating costs; compressed time schedules for design and construction; aversion to perceived risk-taking despite the proven reliability of efficient technologies and designs; and incentive structures and priorities for engineers, designers and contractors which are at variance with efficiency considerations.

The C&I Programs include a comprehensive set of offerings and strategies to address the market barriers noted above and to, subsequently, achieve market transformation in equipment specification, building/system design and lighting design. These include:

- Program emphasis on customer-initiated construction and equipment replacement events that are a normal part of their business practice.
- Coordinated and consistent marketing to commercial and industrial customers, especially large and centralized players, such as national/regional accounts, major developers, etc.
- Consistent efficiency and incentive levels for efficient electric and gas equipment and design practices to permanently raise efficiency levels.
- Prescriptive incentives for pre-identified efficiency equipment and custom measure incentives for more complex and aggressive measures to permanently raise the efficiency levels of standard equipment.

- Design support/technical assistance to developers and their design team for new construction and renovation projects to permanently raise the efficiency levels of design practices.
- Specialized technical assistance for small commercial customers and educational institutions.
- Technical support for newly enacted commercial energy code including training in energy code requirements.

**Program Delivery**

In 2003 the C&I Program was delivered by the State's seven natural gas and electric utilities.

**Program Goals and Minimum Requirements for Program Administration**

Goals and minimum requirements for program administration were not adopted for the C&I Program for the 2003 program year. However, the November 1, 2002 filing of the Collaborative included proposed 2003 goals and minimum requirements for program administration. These proposed goals will be used as the baseline for assessing 2003 program results for the C&I Program.

Marketing plans that were developed to support the achievement of these goals were suspended and sales activities were significantly curbed in 2003 while the BPU considered changes to the administrative structure of the programs. Without marketing and sales efforts to support the goals the utilities were in a reactive mode with regard to the number of applications processed, that is, they had minimal ability to stimulate additional participation in the program. Consequently, the Program Results section below will review 2003 program results in the context of these parameters and assess the impact of the suspension of marketing on the program.

## Program Results

The following summarizes budgets, expenditures, participation levels and energy savings for the program for 2001, 2002 and 2003:

| **C&I Energy Efficient Construction Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| | (000) | (000) | (000) | (000) |
| **Program Budgets*** | $21,551 | $28,353 | | |
| C&I Construction | $984 | $496 | | |
| Building O&M | $445 | $72 | | |
| Compressed Air | | | | |
| Commercial New Construction | | | $3,145 | |
| Retrofit | | | $24,089 | |
| School Construction | | | $6,670 | |
| Total | $22,980 | $29,944 | $33,904 | |
| | | | | |
| **Expenditures** | (000) | (000) | (000) | |
| Actual Expenditures | $12,501 | $38,839 | $30,555 | $81,895 |
| Committed Expenditures | $7,666 | $11,632 | $12,827 | |
| Actual + Committed | $20,167 | $50,471 | $43,382 | |
| | | | | |
| **Participants (core and non-core)** | | | | |
| Actual | 1,843 | 9,766 | 4,209 | 15,818 |
| Committed | 4,205 | 2,016 | 2,603 | |
| Actual + Committed | 6,048 | 11,782 | 6,812 | |
| | | | | |
| **Energy Savings** | | | | |
| ***Actual*** | | | | |
| Electric | MWH | MWh | MWH | MWh |
| Annual savings | 30,943 | 144,635 | 197,347 | 372,925 |
| Lifetime Savings | 464,149 | 2,164,648 | 2,944,525 | 5,573,322 |
| | KW | KW | KW | KW |
| Annual savings | 6,364 | 26,750 | 38,155 | 71,269 |
| | | | | |
| Gas | Dtherm | Dtherm | Dtherm | Dtherm |
| Annual savings | 33,802 | 33,504 | 88,305 | 155,611 |
| Lifetime Savings | 616,099 | 502,563 | 1,510,800 | 2,629,462 |
| | | | | |
| ***Committed*** | | | | |
| Electric | MWh | MWh | MWh | |
| Annual savings | 62,505 | 51,226 | 162,510 | |
| Lifetime Savings | 937,582 | 654,800 | 2,441,633 | |
| | | | | |
| Gas | Dtherm | Dtherm | Dtherm | |
| Annual savings | 0 | 31,802** | 27,617 | |
| Lifetime Savings | 0 | 477,024** | 416,360 | |

*This program has undergone a number of iterations since 2001. In 2001 and 2002 it was run as three separate programs: commercial and industrial construction (C&I), building operation and maintenance and compressed air. In 2003, these three programs were combined into the C&I program and budgets were developed for three separate program components: commercial new construction, retrofit and school new construction/retrofit.
**Corrected from 4Q02 Report.

The C&I Program had several goals that were proposed for the 2003 program year. The following compares actual 2003 results to each of these proposed goals:

1. Goal: Collectively process through completion at least 1902 total New Jersey SmartStart Buildings Program applications.

   2003 result: 4,209 applications were processed, almost double the goal. While the number of participants exceeded the goal it was well below 2002 levels. Specifically, participants dropped from 9,766 in 2002 to 4,209 in 2003. A large portion of this drop off is attributable to the changes made to the prescriptive lighting portion of the program in 2002.

   Specifically, in early 2002 a significant number of applications were received based on the fact that the costs for certain lighting measures had dropped to a level below the rebate level, allowing contractors to deliver lighting retrofits to customers at no cost. Once this was discovered rebates were reduced from $40 to $20 per fixture, thereby stemming the onrush of applications. Most of the drop off in both expenses and participants is attributable to this fact. For example, for JCP&L prescriptive lighting applications dropped from 3329 in 2002 to 806 in 2003 and expenses for prescriptive lighting dropped from $5.9 million to $2.1 million. PSE&G and Conectiv saw similar reductions.

   The lack of program marketing and the reduction in direct sales efforts also contributed to the drop off in participation levels. While it is difficult to attribute the precise effects of a lack of marketing, the utility program managers all believed that higher results were achievable if they had been permitted to implement additional marketing activities. This is particularly true for this program, where the sales cycle requires both marketing and individual follow ups with customers to explain the benefits of the program.

   While participation levels dropped by over 50% or from 9,766 in 2003 to 4,209 in 2003, expenditures were over $30.5 million, only about 10% below the budget of $33.9 million. This is attributable to larger, more comprehensive projects participating in 2003.

2. Goal: Collectively process through completion at least 184 Multiple Measure Projects.

   2003 result: 179 multiple measure projects were completed, 5 below the goal. The utilities attribute the drop off in the number of multiple measure projects to the cut backs in sales activities. Projects such as these require direct contact between representatives of the program and customers to explain the benefits of the program and the benefits of

installing energy efficiency projects. These discussions include both explanations of available technologies and their attributes and the financial impacts of investments in energy efficiency technologies in terms of life cycle costs often needed to sell projects to a company's financial people.

3. Goal: Collectively process through completion or commitment at least 42 Comprehensive projects.

   2003 result: 25 comprehensive projects were completed or committed in 2003, 17 below the goal. See response to 2 above.

4. Goal: Collectively achieve the cited participation levels for the following program paths:
   a. Tier 2 unitary HVAC installations completed: 415

      2003 result: 1072 installations completed in 2003, 657 above the goal.

   b. Chiller optimization projects completed or committed: 8

      2003 result: 5 projects committed or completed in 2003, 3 below the goal. See response to 2 above.

5. Goal: Collectively achieve 12 lighting remodel projects.

   2003 result: No lighting remodeling projects were completed in 2003. See response to 2 above.

6. Goal: Collectively achieve the following electric energy savings: 85,500 Megawatt-hours.

   2003 result: Annual electric savings were 197,347 MWh, more than double the goal

   While expenses and participation levels dropped in 2003 from 2002, annual electric savings increased from 144,635 MWh in 2002 to 197,347 MWh in 2003, an increase of over 36%. These savings were more than double the proposed goal. The increase in energy savings is in part attributable to the number of prescriptive lighting projects installed in 2002 compared to 2003. Prescriptive lighting projects tend to be located in smaller commercial facilities and do not produce the same level of savings as do larger projects.

   In 2003, the cost per MWh saved for JCP&L projects dropped from $237/MWh to $142/MWh. Participants in 2003 took advantage of rebates for technologies that produced a greater savings per dollar and rebates where for larger overall projects. This experience was confirmed by the other utilities.

7. Goal: Collectively achieve the following gas utility energy savings: 380,248 therms.

2003 result: Annual gas savings were 883,050 therms, more than double the goal.

While expenses and participation levels dropped in 2003 from 2002, annual gas savings increased from 335,040 therms in 2002 to 883,050 therms in 2003, more than doubling. These savings were more than double the proposed goal. The increase in energy savings is in part attributable to the installation of larger more comprehensive projects in 2003.

8. Complete 10 compressed air audits/studies.

   2003 result: 4 compressed air studies were completed in 2003, 6 below the goal. See response to 2 above.

9. Complete 8 compressed air projects.

   2003 result: 7 compressed air projects were completed in 2003, 1 below the goal. See response to 2 above.

*Previously Proposed 2003 Minimum Requirements for Program Administration*

The following are the minimum requirements for program administration for the C&I Program that were proposed for program year 2003:

- Collectively implement all elements of the program in a consistent and timely manner across the entire state.
- Collectively meet at least 50% of the utilities' agreed-upon statewide MWh savings and Therm goals.
- Continued support for upgrades to federal efficiency standards and state building codes.

Based on its review of utility activities and homes certified by each utility, CEEEP believes that the program was consistently implemented by all seven utilities across the state and that the utilities used best efforts to implement the program in a timely manner. The energy savings requirement was exceeded. Several utilities supported proposed legislation to support State minimum efficiency requirements for products not covered by federal standards. Based on the above, CEEEP believes the above minimum requirements for program management were met.

**Recommendations**

1. Consider approving additional marketing activities and sales efforts aimed at increasing participation levels in the C&I program.

2. Expenditures for the school construction component of this program were $1.628 million which is $5 million below the 2003 budget of $6.670 million. The utilities have indicated that a number of schools have received approval to commence construction of schools funded through the Schools Construction Corporation. However, the utilities have indicated they are not receiving applications for rebates from these schools despite utility efforts to bring schools into the program.

The school construction program represents one of the largest publicly funded construction programs in the State and decisions regarding the energy impacts of these schools made today will have long lasting effects on the schools energy usage and cost. Given the low level of participation of schools in the program in 2003, CEEEP believes it is imperative that the Office of Clean Energy convene meetings as soon as possible to determine why the participation level was so low in 2003, whether participation levels have picked up in 2004, and if they have not explore ways to increase the participation of schools in this program so that this one time opportunity to impact school construction decisions is not lost.

3. Examine the continued appropriateness of specific program goals such as number of multiple measure projects, comprehensive projects, lighting projects, etc. and if appropriate, develop specific goals to be utilized by the new program manager.

4. Program managers typically rely on market intelligence gained through evaluations or other research to determine technologies that should be added to or deleted from a program or on market penetration levels and prices to determine if rebates should be modified. This is particularly true for the C&I program where market conditions change rapidly. Without the information gained through the planned evaluations that were terminated, the utilities did not had the information required to make an informed decision regarding potential changes to the programs and accordingly, very few changes have been made to rebate levels since 2001.

   Evaluation activities should be commenced to obtain the information necessary to review technologies eligible for rebates and rebate levels and appropriate changes should be made to the rebate schedules.

5. Combined heat and power technologies were added to the C&I program in 2004 thus becoming eligible for rebates. However, no cost benefit analysis was performed, no market barriers were identified and no strategies for overcoming such barriers were identified. CEEEP believes the types of assessments discussed above in the Executive Summary need to be part of any new program approval and recommend that the Office of Clean Energy obtain such assessments prior to setting 2005 budgets for the CHP component of the C&I program. CEEEP will include a proposal to perform such assessments on an expedited basis as part of the evaluation plan being developed.

6. Several new programs were added in 2004 that may impact the existing C&I program including the Performance Contracting Program and the EDA financing program. The Office of Clean Energy should include utilities in any discussions regarding the designs of the new programs to identify opportunities for the programs to coordinate including joint marketing and to avoid conflicts between the programs.

# Appliance Cycling Program

## Program Description

The following summarizes the description of the Appliance Cycling Program:

New Jersey's Appliance Cycling Programs have been in place for over ten years and currently include over 223,000 participants that can deliver 194 MW of system load relief. The program has been used by certain utilities to provide both broad relief at times of system peak and localized relief on targeted T&D circuits. By using radio-activated relays, system operations selectively cycle primarily air conditioning equipment through a variety of operating strategies, which are designed to optimize system load and lower the peak demand while minimizing the impact on the customer. The short duration of such load cycling periods (generally fifteen (15) minutes of each half-hour when activated) minimizes the impact of the cycling on the customer's comfort.

Conectiv had over 19,000 active participants in the program in 2003 controlling more than 27,000 appliances (central air conditioners, heat pumps, water heaters, and motors). PSE&G has installed radio receiver switches on more than 140,000 central air conditioners, heat pumps (or in the thermostats which control them) and qualifying water heaters (when accompanied by a central air conditioner or heat pump) since 1990. JCP&L has, since 1991, installed over 66,000 outdoor radio receiver switches and more than 18,000 thermostat-based radio receivers.

Over the past several years each of these utility programs has been in an operations and maintenance mode meaning that the existing number of customers in the program was maintained, with new customers replacing those that drop out of the program (the Conectiv program is closed to new participants).

## Program Delivery

There is no joint or coordinated delivery of the appliance cycling program. Each utility individually markets and delivers their specific program.

## Program Goals and Minimum Requirements for Program Administration

No goals or minimum requirements for program administration were developed for this program for 2003.

**Program Results**

The following summarizes expenditures, participation levels and energy savings for the appliance cycling program for 2001, 2002 and 2003:

| **Appliance Cycling Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| **Program Budget** | (000) | (000) | (000) | (000) |
| | $6,740 | $7,246 | $7,906 | $21,892 |
| | | | | |
| **Expenditures** | (000) | (000) | (000) | (000) |
| Actual Expenditures | $7,825 | $7,516 | $5,916 | $21,257 |
| | | | | |
| **Participants** | 239,060 | 226,830 | 223,689 | |
| | | | | |
| **Savings*** | KW | KW | KW | |
| Annual Demand Reductions | 204,971 | 196,222 | 194,531 | |
| * this program does result in any MWh savings | | | | |

**Assessment of 2003 Program Results**

The program was in the maintenance mode in 2003 meaning utilities replaced customers that dropped out of the program but did not undertake efforts to expand the program (Conectiv did not replace customers that dropped out). Accordingly, the total number of customers in the program has dropped from 239,060 in 2001 to 223,689 in 2003 and the demand savings has dropped from approximately 204 to 194 MW.

The following sets out the specific activities of the three utilities that operate an appliance cycling program:

*JCP&L*
JCP&L maintained the load control program consistent with practice in recent years through operation of control events and by assessing and upgrading confidence in system performance. JCP&L initiated seven general appliance cycling events in 2003 and one local event for system support; no PJM emergency events were called.

A limited sample of inspections and an updated mapping of radio signal strength indicated a need for communications upgrades, some of which were implemented in 2003 and others scheduled for completion by the beginning of the 2004 cycling season (i.e. new towers installed in Point Pleasant and Red Bank). Procedures for the operation of the direct load control system during emergencies were also updated.

An initial field study of Superstat (Superstat are the thermostats installed with the ability to cycle load performance in November indicated they generally perform where signal strength is adequate. Mapping activities were completed to assess confidence in communications based on zonal ranges from transmitter towers (0 - 2 1/2 mi; 2 1/2 - 7 mi; 7 - 14 mi). This information will

be valuable for qualifying new participants based on location once the program begins accepting new applicants. In addition, staff continued to research the marketplace for program best practices and the availability of new technology.

*Conectiv*

Through the Residential Air Conditioning Cycling Load Control Program, Conectiv will continue to use air conditioner cycling strategies to provide capacity relief on days of system peak. By using radio-activated relays, system operators will selectively cycle air conditioning equipment through a variety of operating strategies, which are designed to optimize system load and lower the peak demand while minimizing the impact on the customer. The short duration of such load cycling periods (generally fifteen (15) minutes of each half-hour when activated) minimizes the impact of the cycling on the customer's comfort.

Conectiv's appliance cycling program was not activated in 2003 due to lack of need.

*PSE&G*

PSE&G continued operating the program, but due to budget uncertainty did not replace customers who dropped out in 2003. The program was activated only twice, on August 14 and 15. This use was related to restoration efforts due to the Northeast blackout, and only PSE&G's Metropolitan and Palisades Divisions were affected. PJM recognizes Active Load Management (ALM) Programs as a capacity resource. In return for giving PJM control of ALM dispatch, companies receive capacity credit. PJM provides the ALM capacity credit to the load serving entity (LSE). Since PSE&G is not an LSE, the capacity credit is provided through regular settlements with BGS providers based upon the number of tranches each provider serves. PSE&G nominated and PJM accepted 128.9MW for this program in 2003.

**Recommendations**

1. The appliance cycling program can be used to deliver system peak shaving which has both a capacity value and economic energy value, can be used to deliver economic energy at times of high system prices and may be used to address local reliability issues. For example, it was identified as a tool that could help address the local reliability issues in the barrier islands.

   Questions regarding the cost effectiveness of the program have arisen given the current glut in the PJM capacity market and the resultant low capacity prices. The utilities believe that current low capacity prices and energy price volatility are of a short-term nature and that the program needs to be evaluated over a longer timeframe.

   It has also been suggested that the utilities explore the possibility of selling the benefits of the program through registration in PJM's economic load response programs, in addition to registering the program for PJM Active Load Management (ALM) credits. The benefits of the program are currently allocated to winning BGS bidders at no cost thereby reducing their capacity obligation and load during peak pricing periods resulting in lower BGS costs.

Capacity value is only one input to the cost effectiveness equation. When peak load is reduced, the direct value of reduced purchases at high prices, and the value of market effects resulting from reduced locational marginal prices for the PJM system can be highly significant. However, this value is difficult to reliably quantify and there have been no recent attempts to quantify such values.

Another issue that has arisen is what is the purpose of the program? Is it to provide peak shaving, economic energy, local reliability support, or all of the above? The utilities currently use the program for different purposes and consideration should be given to utilizing the program in a more consistent fashion.

The Office of Clean Energy recently authorized CEEEP to commence an evaluation of the Appliance Cycling program to assess these and other issues. The results of this evaluation, which are anticipated to be completed in September 2004, should be utilized to inform any decisions regarding the future direction of the program.

2. Specific goals and minimum requirements for program administration should be developed for the appliance cycling program.

# Cool Cities Program

## Program Description

The following summarizes the description of the Cool Cities Program set out in the Memorandum of Agreement (MOA) between the New Jersey Department of Environmental Protection (DEP) and the BPU:

The Cool Cities Program provides incentives for the planting of trees in urban areas. The tree plantings to be carried out under the Cool Cities Program will represent significant progress toward meeting the Governor's goal to have 100,000 new trees planted across the state.

The purpose of this program as set out in the MOA is to promote energy conservation and "livable cities" through tree planting. Trees mitigate the urban heat island effect thus reducing air temperatures and the need for electricity to run air conditioners.

The Cool Cities Program was designed to accomplish this purpose, first, by planting trees primarily in large, under-served New Jersey cities with low tree cover and, secondly, by planting trees in municipalities seeking to become designated as a "Sustainable Community" or designated by BPU as an "Energy Smart Community". (DEP's newly formed Bureau of Sustainable Communities and Innovative Technologies is developing program criteria by which municipalities can be awarded a Sustainable Community designation and will be working with interested communities to help them qualify.) Each year DEP and BPU will jointly determine which communities have progressed sufficiently toward the designation to qualify to receive trees in support of this initiative.

## Program Delivery

The Cool Cities Program is managed by the pursuant to the MOA between the DEP and the BPU.

## Program Goals and Minimum Requirements for Program Administration

While no specific goals or minimum requirements for program administration were established, the MOA provided that 3000 trees would be planted in 2003, the first year of the program.

## Program Results

Calendar year 2003 was the inaugural year of the "Cool Cities" Program. The program was designed to reduce cooling costs in specific neighborhoods through the planting of street trees. The cities of Trenton and Paterson were the first to benefit from the planting of street trees. Due to funding and logistical issues, planting did not begin until November. Specific neighborhoods were selected in each city based on three criteria: tree canopy cover, residential characteristics, and income levels.

Many volunteers were employed to help promote and coordinate this project. Volunteers were used to distribute flyers and assisted in tree plantings at kickoff events held in each city.

Additionally, each city provided some assistance in coordinating this project within their city. In Trenton, the Department of Recreation, Natural Resources and Culture provided the required help. In Paterson it was Department of Public Works. Following is the breakdown of volunteer hours by city: Trenton: 567; Paterson: 494; Total: 1,061.

1385 trees were planted in Trenton in 2003 and 891 trees were planted in Paterson in 2003 for a total of 2216 trees. While this fell 794 trees short of the 2003 target of planting 3000 trees, CEEEP believes DEP accomplished much in a short period of time given that the program did not commence implementation until November.

***Energy Savings***

Energy savings were not calculated for 2003. Data collection for use in the modeling program *Citygreen* will take place during the summer of 2004 and initial results are expected to be compiled by DEP by September.

***Budgets/Expenditures***

| **Cool Cities Program** | | |
|---|---|---|
| 2003 Budget (000) | 2003 Actual Expenditures (000) | 2003 Committed Expenditures (000) |
| $2,000 | $39 | $1,052* |

*committed expenditures for this program represent work done in 2003 for which invoices were not issued until 2004.

**Recommendations**

1. Goals and minimum requirements for program administration should be developed for the Cool Cities Program.

2. The methods and inputs for calculating energy savings would benefit from an independent evaluation or input/support from consultants with expertise in energy and emission savings delivered by urban tree planting.

# Renewable Energy Programs

## Customer On-Site Renewable Energy Program (CORE)

### Program Description

The Customer On-Site Renewable Energy Program (CORE) is administered by the BPU's Office of Clean Energy. The program promotes renewable energy projects sited on the customer side of the meter.

The program was designed to provide a coordinated set of market intervention strategies to help overcome market barriers and encourage the transition towards self-sustaining markets. Program participation since the April 9, 2001 start of the program has come primarily from residential and commercial solar electric systems with a small number of commercial fuel cells, sustainable biomass projects, and wind generator systems.

The program's activities were designed to address market barriers common to these technologies, while adopting specific market interventions in recognition of important differences in current levels of market preparation and commercialization for each technology. While 2001 was a developmental year for the program with a successful focus on hiring a training and certification contractor, a quality assurance contractor, and the development of a marketing plan, 2002 and 2003 were years of program growth.

### Program Delivery

The CORE Program was administered by the state's seven utilities for the first three months of 2003 before being transferred to the Office of Clean Energy in April of 2003. The Office of Clean Energy processes rebate applications, sponsors training activities and coordinates with industry trade allies. The local distribution companies process interconnection applications.

### Program Goals and Minimum Requirements for Program Administration

Program goals and minimum requirements for program administration were not adopted for the CORE Program for the 2003 program year. While the November 1, 2002 filing of the Collaborative included proposed 2003 goals and minimum requirements for program administration, these were designed for utility program management and no new goals or minimum requirements were developed subsequent to the transfer of the CORE program to the Office of Clean Energy. However, the goals that were developed by the utilities are informative in assessing the 2003 CORE Program results.

## Program Results

The following summarizes budgets, expenditures, participation levels and renewable energy production for the CORE program for 2001, 2002 and 2003. The 2003 results include both projects managed by the utilities in early 2003 and by the Office of Clean Energy for the remainder of 2003:

| **CORE Program Results** | | | | |
|---|---|---|---|---|
| | 2001 | 2002 | 2003 | Total |
| **Program Budgets** | | | | |
| CORE | $17,250 | $16,455 | $12,700* | $46,405 |
| *The BPU established an overall budget of $36 million for renewable energy programs but did not set a specific budget for the CORE program. $23.3 million was allocated to EDA programs leaving $12.7 million for other renewable energy programs. | | | | |
| | | | | |
| **Expenditures** | (000) | (000) | (000) | |
| Actual expenditures | $951 | $6,343 | $7,821 | $15,115 |
| Committed Expenditures | $8,216 | $14,687 | $33,248 | |
| Actual & committed expenditures | $9,167 | $21,030 | $41,069 | |
| | | | | |
| **Participants** | | | | |
| Actual | 6 | 46 | 58 | 110 |
| Committed | 45 | 59 | 226 | |
| Actual + Committed | 51 | 105 | 284 | |
| | | | | |
| **Energy Production-Actual** | | | | |
| Electric production | MWh | MWh | MWh | MWh |
| Annual production | 11 | 2,896 | 7,239 | 10,146 |
| Lifetime production | 173 | 56,330 | 109,981 | 166,484 |
| | | | | |
| | KW | KW | KW | KW |
| Annual Capacity Values | 8 | 1,142 | 1,743 | 8,718 |
| | | | | |
| Gas Savings | Dtherm | Dtherm | Dtherm | Dtherm |
| Annual savings | 0 | 4,161 | 1,664 | 5,825 |
| Lifetime Savings | 0 | 83,220 | 33,280 | 116,500 |
| | | | | |
| **Energy Production-Committed** | | | | |
| Electric production | MWh | MWh | MWh | |
| Annual production | 559 | 19,073 | 61,750 | |
| Lifetime production | 8,440 | 237,064 | 1,265,337 | |
| | | | | |
| Gas Savings | Dtherm | Dtherm | Dtherm | |
| Annual savings | 2 | 25,665 | 2,102 | |
| Lifetime Savings | 0 | 295,040 | 21,024 | |

The CORE program had several proposed goals for 2003. The following compares actual 2003 results to each of these proposed goals:

The proposed goals of this program were to promote market conditioning, development, and transformation. The program was designed to increase demand, due to a combination of direct program and market effect impacts. The increased demand is expected to catalyze market forces that will drive additional growth in consumer demand and bring prices down similar to patterns seen in the market development of other emerging technologies. The CORE Program was designed to decrease direct incentive levels and other forms of market support as indicators of sustainable market development and lower prices emerge.

The proposed 2003 goals were to:

1. Goal: Receive and approve 120 applications for eligible systems during the calendar year.

   2003 result: 226 applications were approved in 2003 exceeding the goal by 126.

   While 2003 was a year of transition, participation levels for the program continued to increase. Rebates were up from 46 in 2002 to 58 in 2003 with an additional 33 projects completed in 2003 that were not paid until 2004 due to delays in the establishment of the fiscal agent. Of the 91 projects completed in 2003, 84 were solar electric, 2 fuel cells, 2 small wind and 2 biomass projects. Installed MWs also increase from 1.142 in 2002 to 1.743 in 2003 not including the additional 33 projects. At the end of 2003 the program had commitments for an additional 226 projects totaling over 13 MW.

2. Goal: Provide rebates for 1,000 kW of installed capacity during the calendar year.

   2003 result: 1,743 kW of capacity was installed in 2003 exceeding the goal by 723 kW.

3. Train fifty or more installers in 2003. Provide for an Installer Certification Test when the national standards are finalized.

   2003 result: This goal was not met. Training and certification activities were suspended due to staff resource constraints.

   The CORE program as designed by the utilities included several components aimed at developing the market for renewable technologies by overcoming identified market barriers including training of potential installers, training of municipal electrical inspectors, marketing aimed at developing consumer demand. Consideration should be given to assessing which of these planned activities should be implemented by the Office of Clean Energy or the new program manager engaged to assist with the delivery of the program.

*Previously Proposed Minimum Requirements for Program Administration*

The minimum requirements for program administration that were proposed for 2003 were developed assuming utility administration of the program and are not relevant given that the administration of the program was transferred to the Office of Clean Energy.

**Recommendations**

1. The CORE Program had over $40 million in commitments at the end of 2003, and the Office of Clean Energy has indicated that this trend has continued in early 2004. The Office of Clean Energy should carefully monitor CORE program activity to assess the impacts of these commitments on future budgets to determine if either future budgets needs to be increased to levels significantly above the 2003 budget or changes need to be made to the program to keep expenditures within budget.

   The Office of Clean Energy has begun the process of reviewing rebate levels. The recent high level of program activity and resultant impact on program budgets should be carefully considered when assessing whether and when to modify rebate levels or make other changes to the program.

2. A process evaluation of the renewable energy programs has commenced with results expected by August 2004. This evaluation will provide recommendations regarding ways to improve the management of the program. Any recommendations that result from the process evaluation should be utilized to inform any decisions regarding the future direction of the program.

3. Annual goals and minimum requirements for program administration should be developed for the CORE program.

# BPU Grid Program

## Program Description

In its March 9, 2001 CRA Order, the BPU allocated 40% of the renewable energy funding to the grid supply and infrastructure program and 60% to the customer sited program in the first year and 50% to each program in the second and third years.

The grid supply and infrastructure program has been administered by the BPU since its inception in 2001. These programs have been implemented through the issuance by the BPU of three requests for proposals (RFPs).

In 2001, the BPU issued an RFP for grid connected renewable energy projects. This program is commonly known as the BPU Grid Supply program. In 2003, the BPU issued two additional RFPs. The first was to support infrastructure development for renewable energy businesses in New Jersey. Since the issuance of the RFP the OCE has further developed the program which is now named the Renewable Energy and Economic Development Program (REED). The BPU also issued a second RFP in 2003 under the grid supply program. This program is now named the Renewable Energy Advanced Power Program (REAP). Each of these RFPs is described in more detail below.

## Program Delivery

All of the renewable energy programs are now managed by the Office of Clean Energy with the financing programs managed in partnership with the NJ Economic Development Authority.

## 2001 BPU Grid Supply Solicitation

In December 2001, the BPU issued a solicitation for renewable energy technology projects in New Jersey for electricity to supply the PJM Power Pool. The BPU announced a competitive incentive program to encourage the development of grid supply renewable electricity generation projects in NJ. The BPU allocated $10 million to the solicitation.

The stated purpose and intent of the solicitation was to provide a competitive incentive program by receiving bids for grid supply renewable energy projects located in NJ. The program provided production credits to encourage development of renewable energy projects that provide power to the grid and promote competition among technologies, encourage cost effective renewable grid supply technologies and encourage the development of a thriving, diversified renewable energy market.

By Order dated July 15, 2002, the BPU awarded incentives to five projects as follows:

| Project Name | Technology | Size (MW) | Upfront Incentive | Production Credit | Total Incentive |
|---|---|---|---|---|---|
| Community Energy | Wind | 7.5 | | 2.9¢/kwh | $1.7 million |
| Clipper Windpower | Wind | 21 | $140,000 | 1.2¢/kwh | $3.1 million |
| Hoburn | Photovoltaic | 1 | $255,000 | 29¢/kwh | $2.6 million |
| PSEG ET | Landfill gas | 4 | | 2.9¢/kwh | $3.9 million |
| Atlantic Renewable Energy* | Wind | 90 | | | $300,000 |
| Total | | 123.5 | | | $11.6 million |

* The BPU determined that the Atlantic Renewable Energy project was not ready for funding but awarded $300,000 from the market infrastructure program to fully examine the feasibility of the project in a more detailed manner before committing grid supply funds.

**2003 Grid Supply Program Results**

To date, three of the five projects awarded funding have gone to contract. These include the Community Energy 7.5 MW Atlantic City Wind Farm, Stellar Energy Systems' 1 MW of aggregate solar electric projects, and a feasibility study for offshore wind energy conducted by Atlantic Renewable Energy Corporation. Projects that have not gone to contract include Clipper Wind Powers' proposal for a 21 MW Wind Farm in Warren County, and the County of Burlington's proposal for a 4.0 MW Landfill to Gas Energy project.

Community Energy is in the process of finalizing project approvals with the NJDEP and hopes to bring the project online in late 2004. The 5 turbine, 7.5 MW project will be the first wind farm in New Jersey and the largest coastal wind farm in the United States. The project will be visible from downtown Atlantic City and the Atlantic City Expressway. Once brought online, the project will produce 15 million kilowatt-hours of emission-free electricity per year.

Stellar energy systems is actively identifying and negotiating with prospective site owners to host the installation of solar electric systems. In an effort to improve the economics of the projects, they are also working on their business model.

Atlantic Renewable Energy Corporation completed their New Jersey Offshore Wind Feasibility Study in May 2004. Preliminarily, the study has indicated that there is sufficient wind resource, transmission infrastructure, support facilities and service industries to indicate real potential for offshore wind power generation in New Jersey.

The Burlington County 4 MW landfill gas to energy project is still being pursued. Additional engineering estimates have identified great enough potential to expand the project to 5 MW.

The following summarizes the BPU Grid Program budgets and expenditures for 2001, 2002 and 2003:

| BPU Grid Program Budgets and Expenditures | | | | |
|---|---|---|---|---|
| | 2001 ($000) | 2002 ($000) | 2003 ($000) | Total ($000) |
| **Program Budget** | $11,500 | $14,916 | * | |
| **Actual Expenditures** | $34 | $303 | $305 | $642 |
| **Committed Expenditures** | | $11,300 | | $11,300 |

*The BPU established an overall budget of $36 million for renewable energy programs but did not set a specific budget for the BPU Grid program. $23.3 million was allocated to EDA programs leaving $12.7 million for other renewable energy programs.

No specific goals or minimum requirements for program administration were established for the BPU Grid program.

**Recommendations**

Recommendations concerning the BPU Grid program are combined with the other renewable energy programs at the end of this section.

## Renewable Energy Advanced Power Program (REAP)

### Program Description

In October 2003, the BPU announced a competitive incentive and financing program to encourage the development of distributive renewable electricity generation projects in New Jersey. The solicitation notes that the BPU has determined that up to $50 million as a combination of incentives and guaranteed financing would be allocated to the solicitation. The $50 million would be a combination of direct funding provided by the New Jersey Clean Energy Program that would be used to leverage additional private financing. The solicitation will remain open pending the availability of program funding with the potential for additional funding to be added to the program in the future.

Under this program, the BPU will partner with the NJ Economic Development Authority (EDA) to provide long-term low interest financing for distributive renewable electricity generation. Tax exempt bond financing may also be available for projects undertaken by schools and municipalities. The BPU has provided EDA with approximately $20 million in New Jersey Clean Energy Program funding and that the EDA will provide matching sources of private financing for an estimated total of $50 million.

### 2003 REAP Program Results

As of the end of 2003, the Office of Clean Energy and EDA were finalizing details of the financing programs. No projects were awarded funding in 2003.

In 2003, the utilities forwarded $19.037 million to EDA for the financing programs. None of this funding was expended in 2003.

### Recommendations

Recommendations concerning the REAP Program are combined with the other renewable energy programs at the end of this section.

## Renewable Energy Economic Development Program (REED)

### Program Description

In January of 2003 the BPU announced a competitive solicitation to provide funding for the development of renewable energy businesses, technologies and market infrastructure in New Jersey. The goal of the program was to leverage public and private funding for the purpose of advancing the technologies and services necessary to support a thriving renewable energy industry in the State. The amount of funding available for this solicitation was $2.7 million.

The solicitation was intended to provide support for the development of market mechanisms and technological advances that will assist renewable technologies to become competitive with traditional generation technologies. Proposal evaluation included the commitment to developing and growing renewable energy business in New Jersey, how this funding will leverage other outside funding and resources, how well the proposed project addresses specific technological or delivery barriers in terms of the New Jersey marketplace, the project's ability to show the impacts to the global marketplace, the need to foster diverse renewable energy technologies, potential cost reduction and the potential environmental benefits.

### REED Program Results

In 2003, just under $2.7 million in grants were awarded to ten renewable energy businesses as part of the Office of Clean Energy's newly established REED (Renewable Energy and Economic Development) Program. The grants were intended to promote renewable energy business development in the State. By year end 2003, nine of the ten companies had signed grant agreements with the NJBPU and have begun their projects. The other company has not yet applied for its award.

In 2003, eight grant recipients received their initial 50% awards totaling $1,137,000. Committed expenditures of $1,561,000 will be paid in 2004.

No performance indicators, goals or minimum requirements for program administration have been developed for the REED program.

The chart below identifies the recipients, the amount of each award and describes the project for which the grant was awarded.

| **REED PROGRAM GRANTS – 2003** | |
|---|---|
| ***Advanced Power Associates Corp.***<br>Award - $119,000<br>Develop a power conditioner that will allow solar electric and wind power to be used in electrolyzers for the generation of hydrogen. | ***Partners for Enc. Quality***<br>Award - $235,895<br>Demonstration of solar electric systems on houses of worship and education and outreach programs once installed. |

| | |
|---|---|
| ***Energy Photovoltaics, Inc***.<br>Award - $500,000<br>Commercialization of thin film solar electric panels including improvements in product performance, reduction in product cost, enhanced product certification, and marketing. | ***Reaction Sciences, Inc.***<br>Award - $297,660<br>Development of thermochemical hydrogen technology and the demonstration of the technology in a pilot scale solid oxide fuel cell. |
| ***Green Mountain Energy***<br>Award - $200,000<br>Education campaign to do outreach to local government officials to include green power in aggregated power purchases. | ***Resource Control Corp***.<br>Award - $225,000<br>Demonstration and commercialization of an integrated system that produces hydrogen from photovoltaic panels, onsite hydrogen storage and fuel cell integration. This system will provide the complete power for a typical home and has multiple off-grid applications. |
| ***Madison Energy Consultants***<br>Award - $270,354<br>A broad based training and business development program to assist Energy Service Companies to establish renewable energy services. | ***Sun Farm Ventures, Inc.***<br>Award - $50,000<br>Develop a first generation monitoring infrastructure based on fixed wireless technology. |
| ***Ocean Power Technologies, Inc.***<br>Award - $499,486<br>Demonstration and commercialization of a powerbuoy, a wave powered generating technology. The project calls of testing and monitoring the Powerbuoy based on innovative technology that advances the efficiency of converting the mechanical energy from waves into electricity. | ***World Water Corp.***<br>Award - $300,234<br>Develop, test and commercialize a converter that is tied to solar electric panel that will allow for efficient motor and grid interactive qualities. |

**BPU Grid/REAP/REED Program Recommendations**

1. Three of the five projects awarded funding under the Grid Program and nine of the ten projects under the REED Program had signed contracts as of the end of 2003 and are progressing as described above. The BPU should consider setting a deadline for the remaining projects to enter into a contract.

2. Protocols for measuring renewable energy generation should be developed for each of the programs.

3. The Office of Clean Energy should provide multi-year forecasts of expenditures for committed renewable energy projects using its best judgment as to when projects will come on line and when committed expenditures will be paid out. These forecasts are necessary for developing program budgets that are based on expected expenditures in each year.

4. The Office of Clean Energy should include utilities or new program managers in any discussions regarding the designs of the new programs to identify opportunities for the EDA financing programs to coordinate with the C&I Program including joint marketing and to avoid conflicts between the programs.

5. A process evaluation of the renewable energy programs has commenced. Results of this evaluation, which are due in August 2004, should be used to inform any decisions regarding the future direction of these programs.

# The New Jersey Clean Energy Program: Recommendations for Administration and Fund Management

A Report to the Board of Public Utilities
from the New Jersey Clean Energy Council

July 21, 2003

## I. Background

The Electric Discount and Energy Competition Act (EDECA – NJSA 48:3-49 et seq.), signed in 1999, requires the New Jersey Board of Public Utilities (BPU) to develop and fund programs to promote renewable energy (RE) and energy efficiency (EE). Specifically, EDECA requires the BPU to perform a "comprehensive resource analysis of energy programs," develop a portfolio of RE and EE programs, and determine their funding (within certain guidelines stated in the Act). This analysis is performed through a Board proceeding with a public hearing as set forth at NJSA 48:3-61, after which the Board in consultation with New Jersey Department of Environmental Protection (DEP) determines the appropriate programs and budget. The Board makes this determination taking into account the following: existing lost opportunities, making energy services more affordable for low-income customers and eliminating subsidies for programs that can be delivered in the marketplace without SBC funding.

Throughout 1999 and 2000, the Board performed its comprehensive resource analysis (CRA) and gathered information from interested parties through public hearings and formal comment periods. On March 9, 2001 the Board issued an order directing utilities to propose detailed program descriptions and budgets for a portfolio of RE and EE programs. On August 15, 2001, the BPU approved the utilities' 2001 program and budget proposals, and determined that utility administration of these so-called CRA programs was appropriate for a one-year period, during which time the Board would retain a consultant to evaluate how to best administer the programs.

In order to assist them in developing, administering and evaluating CRA programs, utilities formed the New Jersey Clean Energy Collaborative (Collaborative). The Collaborative consisted of representation from New Jersey's seven electric and gas energy utility companies and the Natural Resources Defense Council, a national environmental advocacy organization. Utilities also retained the services of several consultants to provide ongoing advice relating to the development and implementation of CRA programs.

In fulfillment of the March 9, 2001 order, the Board retained Davies Associates to perform an evaluation of this administrative structure. In April 2002, Davies Associates issued its report, which identified several areas of concern regarding that CRA administrative structure. In addition, many parties, particularly consumer and environmental groups, voiced similar concerns about CRA programming and the administrative structure during the course of 2001.

During 2002, with a new Governor and new leadership at the BPU, Board staff began to reevaluate CRA and develop proposals to modify the program. As a result of this process, on January 22, 2003, the Board issued an order that: 1) changed the program name from CRA to the New Jersey Clean Energy Program and 2) created the Clean Energy Council (CEC) to provide advice to the Board on issues relating to the Clean Energy Program. The CEC was given a diverse membership, including representatives from utilities, traditional and renewable energy industries, academia, government, and consumer and environmental organizations.

On January 22, 2003, BPU President Jeanne Fox established the Office of Clean Energy and reassigned the Bureau of Conservation and Renewable Energy within the Division of Energy to this new Office. The Office was directed to interface with the CEC and provide the Board with necessary information to make informed decisions concerning the optimum utilization of the New Jersey Clean Energy Program funds. The Office was directed to establish and hire additional staff, using SBC funds, to assist in providing this mission to the Board.

The Office of Clean Energy is responsible for oversight of the New Jersey Clean Energy Program and the U.S. Department of Energy State Energy Plan (SEP). This includes management of the natural gas and electricity energy conservation and energy efficiency programs, including combined heat and power generation; renewable energy programs, including customer-sited generation, grid-connected power plants and infrastructure development; and alternate fuels and alternate technology vehicles, including hydrogen fuel cell vehicles. Data generated, collected, evaluated and assessed through the SEP form the basis for the overall New Jersey Energy Plan.

Currently the Office of Clean Energy consists of three teams: Energy Efficiency managed by Mona Mosser; Renewable Energy managed by Cassandra Kling; and Alternate Fuels managed by Ellen Bourbon. The Office has established a Clean Energy Outreach and Education section and a Clean Energy contracts management section.

In its March 4, 2003 order, the Board gave the CEC two specific tasks. First, the Board directed the CEC to "make a recommendation on the final administrative structure of the New Jersey Clean Energy Program by July 1, 2003." Second, the Board sought recommendations from the CEC about the feasibility of establishing a trust fund for Clean Energy Program money. The Board established a deadline of December 31, 2003 for receiving that report. The CEC agrees with the Board's observation that "the issue of a trust fund…[is] intertwined with the administration issue." Accordingly, this report contains analysis and recommendations on both of these issues.

Additional details on the background of the New Jersey Clean Energy Program Board Order decisions are available in the New Jersey Clean Energy Program CEC Road Map that is available online at www.state.nj.us/bpu/cleanEnergy.

## II. Process and Methodology

The CEC has utilized a number of resources in evaluating potential administrative structures for the Clean Energy Program, and the feasibility of establishing a trust fund for Clean Energy Program monies. In addition to drawing on the expertise and varying perspectives of its membership (*See attached list of current CEC members*), the CEC heard presentations from two experts on EE and RE programs and administration (Charles Goldman of the Lawrence Berkeley National Laboratory, and Roger Clark of the Clean Energy States Alliance), and reviewed the Davies Report. The Council has also held two public meetings on June 10, 2003 and June 25, 2003, and a public forum on May 13, 2003 to discuss these issues. Finally, the

CEC has benefited from analysis provided by BPU staff members who have conferred with EE and RE program administrators in other states, as well as many interested parties here in New Jersey.

## III. Administrative Structure of the Clean Energy Program

Before discussing recommendations for an administrative structure for the Clean Energy Program it is essential to clearly define the distinct activities that encompass the process of developing and implementing these programs. A March 4, 2003 Board Order offers a foundation for our understanding of the various duties necessary to carry out such programs. The CEC has summarized these duties and, where indicated, recommends additional detail to the definitions contained in the Board Order:

- **Policymaking and Oversight**
  The Board describes policymaking and oversight as "determining the roster of programs, the general outline of program design and program funding levels." This would also include establishing (based on, among other contributors, the recommendations of the CEC) the broad goals and specific program objectives for the portfolio of CEC programs. The Board defines oversight as "the review and control of the administration and implementation [of the Clean Energy Program] in terms of effectiveness, efficiency and public benefit."

  Board Orders, as well as language from EDECA, clearly indicate that policymaking and oversight are the responsibility of the Board, in consultation with Board staff, the DEP and the CEC.

- **Administration**
  The Board defines administration as "further developing of program details, contracting for program delivery and managing those contracts." The CEC recommends that other duties of the administrator expressly include managing the budget for the portfolio of Clean Energy Program activities, overseeing and monitoring program management and implementation by third party contractors, and providing the Board, as the policymaking entity, with evaluations and recommendations from which new policy decisions can be made. Outreach and education, and communication and marketing of the overall goals and objectives of the New Jersey Clean Energy Program are also a component of administration. Finally, the administrator will oversee the selection of measurement and verification methodologies, as well as the overall evaluation process.

- **Program Management and Implementation**
  The Board defines implementation as "the program delivery, such as processing grants and rebates, technical assistance to projects and review of applications." Therefore, implementation encompasses direct service delivery for individual programs, and developing individual projects within programs, where applicable.

Program management includes overseeing and coordinating the work of various implementation contractors (if implementation is carried out by multiple contractors), managing the program budget, individual program tracking and reporting, and troubleshooting with regard to kinks in the program delivery process. Other examples include sales and marketing of specific programs and collecting measurement and verification data, as specified by the program administrator, to be used that will be used for program evaluation.

***Setting the Context***

Before evaluating options for the administrative structure of the Clean Energy Program, the Council reached consensus on four key principles that set the context for further evaluation.

1. **The administrative structure for RE and EE programs can and should be similar.**
   The CEC believes there should not be different administrative structures for RE and EE programs. The administrative structure should be flexible enough to accommodate both program types, despite some of their inherent differences. Moreover, a single administrative structure creates economies of scale, provides for more effective utilization of staff resources, and increases the likelihood that RE and EE programs can function in a complimentary manner (e.g. green building for new schools utilizes both EE and RE simultaneously).

2. **The administrative structure should reflect the goals of the Clean Energy Program.**
   It is clear that the Clean Energy Program will embrace a portfolio of goals. A compilation of goals will be developed as part of the development of the 2004 Clean Energy Program plan and budget. The CEC has begun discussions to identify and set priorities for recommended goals. In addition, public and private stakeholders including the BPU, DEP, and Governor's office have all put forth various goals that the Clean Energy Program should accomplish.

   Given the anticipated broad range of goals, the CEC concludes that the administrative structure for the Clean Energy Program must be able to facilitate a portfolio of goals that are diverse and evolving.

3. **Clean Energy Program funds should be distributed in a manner that is not restricted by utility service territories.**
   The CEC believes that Clean Energy Program funds should be used in a manner that encourages opportunity for all ratepayers to benefit from Clean Energy Programs. However, to keep funds isolated within service territories would create unnecessary inefficiencies that would not necessarily increase the equity of the use of program funds. In fact, strict adherence to a requirement of equity of use in each service territory [or customer class] has not been a component of the current Clean Energy Program. However, the CEC recognizes that the current administrative structure can have the impact (albeit unintended) of creating barriers that operate as such restrictions. The CEC does not perceive there to be any equity concerns with regard to

collecting SBC funds from one service territory and distributing them to another. Moreover, avoiding restrictions of service territory boundaries promotes the establishment of uniform, high-level, goals with statewide applicability, and greatly facilitates the uniform and statewide marketing of programs. Therefore, the CEC concludes that Clean Energy Program funds should be distributed in a manner that is not restricted by utility service territory.

A related consideration with regard to Clean Energy Program funds is the topic of equity of collection; that is, ratepayers in different service territories should be similarly assessed the same charge to fund the Clean Energy Program. To do otherwise is both unfair and inconsistent with the goal of administrating the Clean Energy program without regard to service territories. The CEC recognizes that this is a timely and important concern, but one that is outside of the precise scope of this report. However, the CEC encourages the Board to address this issue in the fall of 2003, prior to the implementation of the 2004 Clean Energy Program Budget, in order to establish policy guidance for the program.

4. **Clean Energy Program Funds Should Maximize Opportunities For Leverage With Other Public And Private Funds.**
   The benefits of being able to leverage Clean Energy Program funds include extending the reach of available funding and promoting collaboration among the sectors that contribute financing. The structure and procedures must therefore facilitate and not inhibit such opportunities.

***Options for the Administration of the Clean Energy Program***

In its Order dated March 4, 2003, the Board observed, "[t]here are various options available regarding administration, but most parties agree that the Board can and should take a more active role." The CEC concurs with that conclusion. Recognizing that an increase in BPU activity does not necessarily require an exclusion of distribution utility companies from participating in the administrative structure for the Clean Energy Program, three models were discussed by the CEC with regard to the tasks of administration:

1. **Utility Administration**: This is the current model under which administration is performed by utilities with oversight by the BPU.
2. **BPU Administration**: Under this model, Clean Energy Program staff would take on the administrative responsibilities and have the option to contract out some its administrative duties for certain programs if it deemed its resources and/or expertise insufficient.
3. **Independent Statewide Administration**: This model envisions that the Board would issue an RFP to hire an Independent Statewide Administrator for administration [but not implementation] of the entire Clean Energy Program.

***Evaluative Criteria***
The CEC evaluated the three models for administration of the Clean Energy Program by applying a number of criteria to each option. The following is a summary of that analysis:

- **Availability of administrative resources:** Government agencies are traditionally viewed as more cumbersome and inflexible than private or non-profit entities. While the BPU may be subject to some of these potential limitations, it can develop strategies to overcome them. For example, whatever necessary resources the Board cannot recruit by hiring additional staff, it could secure by retaining contractors. Similarly, state procurement practices need not be unduly burdensome if they are undertaken with strong staff management.

  Utilities would likely have a greater capability than the BPU to devote the necessary administrative resources. A well-managed ISA also would likely have similar access to resources, with a key issue being whether the ISA had an existing administrative infrastructure. In all cases, an important criterion is the ability to minimize the cost associated with employing administrative resources.

- **Experience and existing relationships with relevant parties and stakeholders**: The New Jersey energy utilities have experience administering and implementing Clean Energy Programs, and have established a joint and coordinated effort that advances the goals and objectives of the Clean Energy Program statewide. This joint and coordinated management has been recognized by a number of organizations including the USDOE and the USEPA Energy Star program for its promotion and advancement of energy efficiency and renewable energy. However, their individual experiences are generally not in administering programs with a scope beyond a specific service territory, but rather administering the management and implementation of programs by seven different utilities. Utilities also have valuable relationships with vendors and utility customers; however, this experience will be most useful for program management and implementation, not administration.

  The Clean Energy Program staff has some experience administering portions of the clean energy programs without regard to service territory (e.g. RE programming). Moreover, the BPU has a long history of administering numerous other programs. An ISA may or may not have relevant administrative experience.

- **Cost effectiveness and administrative efficiency**: One of the most frequently cited criticisms of the current utility collaborative structure is the comparative inefficiency of having seven separate entities administering programs that are intended to be implemented without regard to service territory. Although utilities describe the current model as the delivery of the "same" program by each company (not all members of the CEC fully agree with this assessment), the CEC recognizes that the current model can restrict the seamless and transparent implementation across service territory lines. Having a single entity, rather than a seven-member collaboration, administer clean energy programs should create economies of scale and increase administrative efficiency compared to the current structure.

- **Accountability and oversight**: In the past, BPU staff has reported some difficulty overseeing utility administration of the Clean Energy Program. While many of these difficulties have improved, such communication problems between policymakers and administrators would likely be less of an issue, if at all, if the Clean Energy Program staff were administering programs. In addition, the inherent challenges of overseeing seven separate program administrators would be eliminated. BPU staff administration would ensure the most direct design of state oversight. An ISA, as a single entity, would avoid the complexities of the current utility collaboration. Again, the specific capabilities of the ISA and its relationship with the BPU would impact the ease of oversight; however, if a good relationship is established between state officials and the ISA accountability and oversight should be adequate.

- **Flexibility of the administrator**: The BPU has the greatest potential limitations on its flexibility as an administrator because of the administrative rules it must follow with regard to contracts, staffing and other areas. These limitations, however, could be largely overcome with a) strong management from the Board's Clean Energy Program staff, b) the delegation of adequate authority by the Board to Board staff, and c) the use of contractors to carry out administrative duties the Board felt it lacked the resources or expertise to adequately complete.

  An ISA or utility administrator would not face significant flexibility constraints, if given a fairly broad mandate by the Board (which could, however, work at odds with strong oversight and accountability).

- **Aligning the interests of the administrator with program goals**: One of the principal concerns identified in the Davies Report is that utilities may have no vested interest in successful EE and RE programming. Whether or not such a conflict exists, the perception of a conflict by some market participants can negatively impact the effectiveness and public support of the Clean Energy Program. If utility administration were to continue, performance incentives and penalties would be necessary to align the interests of utilities with program goals (although such incentives would come at a price).

  In contrast, under administration by the Clean Energy Program staff or an ISA that is directly under contract with the Board, program goals are strongly aligned with the interests of the administrator.

- **Organizational Culture of the Administrator**: To be successful, the administrator must understand and be able to advance the goals of the Clean Energy Program as well as the values, such as transparency, collaboration, and broad participation by stakeholders, and which are embedded in the programs. An organization selected to administer some or all of the Clean Energy Program should be have a demonstrated capability to reflect the culture of the program.

The administrator must understand how the New Jersey Clean Energy Program is part of the State's and the Board's overall goals and how the program can be linked to other state and Board goals and programs.

- **Sustainability of the Clean Energy Program**: An attractive administrative structure will ideally provide an environment that will allow the Clean Energy Program to predictably plan and operate over the long term. This issue is primarily tied to the budgeting process of the Clean Energy Program. Any well-managed organization that is armed with a multi-year budget can effectively address this criterion.

- **Transition issues**: Changing the administrator to either an ISA or the Clean Energy Program staff will require a transition period to phase out the old administrative structure and phase in the new. The duration of this transition period will depend on how much time the new administrative entity needs to ramp up resources and develop expertise and institutional capabilities, and how long the utility administrator will be able to retain personnel in jobs destined to be terminated. A hasty, ill-defined or under-funded transition could not only jeopardize the effectiveness of programs going forward, but could risk undermining some of the gains that have already been achieved through current Clean Energy Programs. In contrast, maintaining utility administration would not present any transition issues.

***Recommendations Regarding Administration***

Our analysis begins with the option of maintaining the status quo of the utility collaborative. While the current joint and coordinated program has advanced and evolved, when considered in the context of the current direction of the Clean Energy Program, the CEC believes a new administrative structure can offer substantial improvements when compared to the current structure. An underpinning of the Clean Energy Program is to view the program activities as a public initiative, not merely customer services provided by utility companies. As stated earlier in this report, the CEC believes that the Clean Energy Program should be administered without regard to the boundaries of service territories. Moreover, removing utilities from the function of over all program administration will enhance public confidence by addressing the perceived conflict of the utility business model and Clean Energy Program goals.

On the other hand, the CEC does anticipate the prospect of continued active and successful involvement of utility companies, on an equal footing with other non-utility enterprises, with the implementation of specific programs. This opportunity represents a changing paradigm for utility participation. Not only are the companies relieved of administrative tasks, but also their program involvement arises in the context of a competitive market place for program implementation. These factors combine to give the utilities choice of whether and to what extent they wish to be involved in direct program management or implementation. It is also recognized that barriers that prevent the utilities from competing in this new paradigm should be reduced and eliminated.

Consideration therefore turns to an approach that would assign administration to an existing non-utility institution. The establishment of an entirely new organization, responsible for all

Clean Energy Program administration, was eliminated from consideration due to the transition concerns that such an approach would present.

No non-governmental organization has come forward nor readily comes to mind to assume complete responsibility for Clean Energy Program administration. That is not to say that such organization does not exist, but rather that there is no compelling reason to turn to such an organization nor away from the third option of BPU lead administration of the Clean Energy Program.

After careful analysis of all the above considerations, the CEC recommends that the Clean Energy Program staff serve as the primary administrator of the Clean Energy Program. In effect with the establishment of the Office of Clean Energy, the Board has been taking on more of these administrative tasks lately and is increasing staff to support these responsibilities.

BPU lead administration would most directly and effectively align the interests of the administrator with those of the policy-making entity for the Clean Energy Program. BPU administration also offers the most direct accountability and oversight for Clean Energy Programs.

Many of the concerns about BPU administration – such as a lack of resources, flexibility and experience compared with utilities – are diminished when one takes a closer look at the requirements of administrative duties versus duties of the implementer. Moreover, as stated above, the NJBPU Office of Clean Energy could outsource certain administrative duties if limitations in resources, flexibility or expertise became a problem. Therefore, if the Board gives staff a broad mandate to administer programs and outsource duties where necessary, this model can retain many of the advantages of the ISA and utility administrator models.

The Board must be very careful, however, to leave adequate time to complete a smooth transition from utility administration to BPU administration. Office of Clean Energy staff should work with utilities on a transition plan that includes milestones, a clear end date, and transition reports to the Board. Before beginning this transition, the Office of Clean Energy staff must have a clear idea of what resources it will need and clearly delineate the duties of staff in the Office of Clean Energy. If the Board President, in the fulfillment of that office's management responsibilities, determines that Clean Energy Program staff does not yet have adequate resources to administer the program than the transition should begin slowly until the Board increases its resources. In such situations, the Office of Clean Energy staff should consider third party administration.

***Program Implementation***

The determination of the best approach to program implementation will depend on the specific design of each program. However, in the course of evaluating options for the overall administrative structure, the CEC identified a number of principles that should be utilized by the Board and Office of Clean Energy staff in determining a specific program implementation strategy.

Program management is an inherent part of program implementation that describes the task of managing all aspects of a specific program to the end of achieving the articulated goals and objectives. A program manager can be viewed as a general contractor. All costs that do not result in the delivery of the specific program activity should be considered a management cost.

Assuming that the Office of Clean Energy staff is assigned responsibility for overall program administration, including the determination of program managers and implementers, the same staff should not, except in limited instances, implement specific programs. Such situations may arise where the staff has a unique qualification to assume responsibility for the implementation of a specific program. Two examples come to mind: 1) the current RE programs which are established and less complex relative to other programs, eliminating the need to allocate funds for third party implementation, and 2) the overall outreach and communication activities which are not program specific but rather are intended to inform about the components and opportunities presented by the full Clean Energy Program.

## IV. Considerations for Financial Management and the Feasibility of a Trust Fund

The CEC has been asked to evaluate the feasibility of establishing a trust fund for Clean Energy Program funds. Currently, each utility collects funds for the Clean Energy Program through the societal benefits charge (SBC), an adder on energy rates mandated by EDECA to collect funds for various programs. The utility then distributes funds to Clean Energy Program contractors and participants in its territory. Utilities periodically report their SBC revenues and expenditures to the BPU and are compensated through traditional ratemaking for any under-collections or return any over-collections.

Three models for management of Clean Energy Program funds were considered by the CEC:

1. Continuation of the current utility-specific fund management with reporting to the BPU.
2. Establishment of a trust fund to which utility companies would transfer Clean Energy Program funds for management and disbursement by the trust fund. Once transferred, the funds would become the property of the trust fund.
3. Appointment of a fiscal agent by the utilities. The fiscal agent would hold the funds on behalf of the utilities, which have collected the monies from customers for use in the Clean Energy Program, and manage the fund on behalf of the Board. Fund management would include the participation of the Office of Clean Energy with regard to authorizing the disbursement of the funds.

### *Evaluative Criteria*

The CEC evaluated the three models for management of the Clean Energy Program funds by applying a number of criteria to each option. The following is a summary of that analysis:

- **Ensure the integrity of Clean Energy Program funds and availability for the intended use**: An overriding concern of the CEC is that the selected model should deter

the possibility that the Legislature or executive would use Clean Energy Program funds for a purpose other than RE and EE programming. Although the CEC recognizes that no model can provide the certainty of the theoretical "lock box", a model that reflects the role of the utility as a collection point for funds that are disbursed at the direction of the Board most effectively addresses this concern. Both the current Collaborative and the fiscal agent models provide such a framework.

- **Flexibility to disburse funds geographically without regard to service territories**: While no one option precludes this policy approach, a central fund facilitates the administrative model. Moreover, a single fund, by it design, is more aligned with the vision of the Clean Energy Program as a program that is not subject to service territory limitations.

- **Flexibility to handle funds from other sources:** This includes leveraging the Clean Energy Program funds with other state and federal funding as well as other private sector and public organization funding. The Board is currently considering the adoption of two programs that will result in the collection of monies intended to supplement the SBC as a source of Clean Energy Program funds. They are, the proposed alternative compliance mechanism pertaining to the Renewable Portfolio Standard and the proposed ability of utility ratepayers to be able to check off a portion of their bill to be devoted to the Clean Energy Program. While a separate fund could be established for the RPS program and each utility could maintain a separate accounting for a check off program, such complexity runs counter to the construct of a single integrated Clean Energy Program model that has been articulated by the BPU and in supported by the CEC.

- **Limiting costs associated with the management of Clean Energy Program funds:** The CEC does not think that the establishment of a central fund account, with a fiscal agent, would increase the cost of fund management that is now embedded in each utility. In fact, since the fund management role of the utility will be limited to transmitting collected funds to the fiscal agent, this model should reduce the uncertainty currently faced by a utility company with regard to the prudence of its application of these funds. Similarly, the overall cost of this model may well be lower than the current model when the costs associated with each company's periodic reporting and reconciliation for the Clean Energy Program portion of SBC funds are considered. The CEC is also of the opinion that the establishment of a trust fund would necessitate a more complex legal and administrative structure, and thus would cost more than the designation of a fiscal agent.

- **Promoting oversight and public confidence in fund management:** Adoption of a model based upon either a fiscal agent or trust fund will provide greater transparency to the process of collecting and disbursing program funds. While the BPU can provide assurance of a reliable and accurate accounting through the current model of utility company fund management, a central account will better contribute to public confidence.

***Recommendations***

The CEC concludes that Clean Energy Program funds should be managed as a single integrated fund, rather than the current approach where each utility company manages its own

account. The CEC encourages the Board to consider the experience related to the Universal Service Fund that is managed on an integrated basis.

The CEC recommends that the Board pursue the designation of a fiscal agent to hold funds received by the utilities intended to support the Clean Energy Program. Funds transferred to the fiscal agent are not intended to become state funds, but rather funds only subject to disbursement as directed by the BPU Office of Clean Energy consistent with policies established through an order of the Board and in accordance with the procedures articulated by the Clean Energy Program. This approach will best facilitate the statewide implementation of Clean Energy Programs, and will increase public confidence in the handling of Clean Energy Program dollars.

The CEC believes that the increased efficiency of having a single point for managing and distributing Clean Energy Program funds will outweigh any transitional administrative costs associated with its creation. The apparent simplicity of the fiscal agent, as compared to the establishment of a formal trust fund, also contributes to the attractiveness of this option. In addition, the CEC members agreed that Clean Energy Program dollars could never be completely isolated from "political exposure" for redirection. However, the fiscal agent model maintains the ownership of the funds with the utility company while providing a more simplified structure for management of the fund.

As a closing point, the CEC wishes to underscore the importance of designing programs and developing budgets that limit costs of administration and management and thereby maximize the resources that are devoted to the actual delivery of value in the form of EE and RE activities. To that end, as part of the development of the recommended 2004 program budget, the CEC and Clean Energy Program staff should work together to incorporate a recommended cap upon the amount of money that can be spent on administration of the Clean Energy Program. Similarly, a recommendation will be developed limiting the total amount of money that can be spent on the soft costs of program management. While such soft cost will vary for each program, the 2004 budget will reflect a commitment to limiting them.

## Appendix: Clean Energy Council Membership

**Jeanne M. Fox**, President, New Jersey Board of Public Utilities (Council Chair)

**Bradley Campbell**, Commissioner, New Jersey Department of Environmental Protection

**Deane Evans**, Executive Director, Center for Architecture and Building Science, New Jesey Institute of Technology

**Steven Gabel**, President, Gabel Associates

**Rev. Fletcher Harper,** Executive Director, Partners for Environmental Equality

**Fred Hauber**, President, Eastern Energy Services

**Liz Johnson**, Executive Director, ISLES

**Harry Kaufman**, Worldwide Energy Manager, Johnson & Johnson Corporation

**Ellen Lutz**, Director, Energy Efficiency and Renewable Energy, U.S. Department of Energy

**Fred Lynk**, Chief Environmental Officer, PSE&G

**Charles Marciante**, General Manager, International Brotherhood of Electrical Workers, Local 269

**Robin Nickles**, Vice President, Retail Facilities Management, Lowe's

**Lyle Rawlings,** President/CEO, Advanced Solar Products, Inc.

**Emily Rusch**, Energy Advocate, NJPIRG

**Seema Singh**, New Jersey Ratepayer Advocate

**Joe Sullivan**, Director of Facilities, The College of New Jersey

**Craig Swaylik**, Senior Marketing Sales Engineer, New Jersey Natural Gas

**Beth Sztuk**, Deputy Director, New Jersey Economic Development Authority

**Stephen Tang**, President & CEO, Millennium Cell

**Jeff Tittel**, Executive Director, Sierra Club of New Jersey

**Carol Trabachino**, Manager of State Programs, Office of Industrial Productivity and Energy Assessment, Rutgers University